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AMERICAN VETERINARY REVIEW.

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AND OTHER VETERINARIANS.

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AMERICAN VETERINARY REVIEW,

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ORIGINAL ARTICLES.

CONTAGIOUS DISEASES OF ANIMALS IN THE UNITED STATES.

A Paper read at the Chicago Convention by Prof. J. LAW, F.R.C.V.S., of
Cornell University.

No more important question can to-day engage the attention of the citizen or statesman than that of the contagious diseases of animals, and the means of suppressing and extinguishing them. This subject has been too long neglected, and is liable to continued neglect for the reason that those who suffer pecuniarily from these affections have a deep personal interest in keeping the extent, and even the very fact of their losses, a profound secret. The city milkman who loses from the bovine lung-plague in a single half-year a number of cows equal to the entire herd that he holds at any one time would drive his customers to other dairies and invoke financial ruin if he published the fact of his heavy losses. The horse-dealer would find his stock a drng in the market if he were injudicious enough to report that glandered animals had occupied his stalls. The flockmaster would throw away his chances of a remunerative sale if he let it be known that his sheep suffered from scab, lung-worms, or foot-rot. The swine-breeder might give up all hope of profit if he allowed that his herds were infested with trichinæ or contaminated with swine-plague. Yet we well know that these are only examples of the animal contagia now existing among us, and that threaten the whole of the live-stock

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industries of this great country. Our entire Southern coast is contaminated with a poison deadly to all bovine animals that have not been inured to it from the earliest dawns of life, and Dr. Salmon has shown that this poison is steadily advancing Northward.

This Poison is Inherent in the Soil,

and in a suitable field may live and propagate in the earth independently of animal hosts. It is, therefore, in one sense, even more redoubtable than those animal contagia which have little or no viability or power of self-propagation out of the living animal body. Happily for us, as yet this redoubtable poison can not survive the winter frosts of our Northern States. The disease has to make a fresh start the next year from its perennial home in the Sunny South. Whether it can, by a slow and general advance through the intermediate climates of the middle States, become finally acclimated and fitted for survival in the extreme North, is a question that must be settled by carefully-conducted experiments; unless, indeed, we elect to pursue our time-honored policy of letting the experiment be wrought out in the natural way, and of ascertaining, mayhap when too late, that our Northern herds are yearly scourged by the plague, and that our Northern pastures have become permanently saturated with the deadly germs. The prevalence of this poison on the whole coast of the Gulf of Mexico and on the islands in the Gulf, suggests that it is an indigenous germ, generated in some way in that particular soil, and hence we must learn much more than we know of its history before we can decide whether it will ever be possible to stamp it out. At present we can prevent its

Yearly Summer Invasions

of the North, and its slower but more permanent advances in the middle States; we can even habituate young animals to its influence, so that they may not fall victims to its ravages; but we can not promise by any known measures to purify the already contaminated Southern States and guarantee them wholesome to cattle brought from without.

Take another prevalent plague: tuberculosis. There cannot

be a doubt that this is a contagious disease, and I feel that I can no longer rationally doubt it is caused by the infinitesimal gerin—*bacillus tuberculosis*—recently discovered by Koch. The fact that this scourge is common to man and a large class of domestic and wild animals places it on a height of sanitary importance, and forbids us to ignore it, or to contemplate it with feelings other than those of dread and apprehension. The vital statistics of New York city show that 29 per cent. of the mortality of its adult male population is from tuberculosis, and our examination of the herds that supply that city with milk reveals the astounding fact that in certain herds tuberculosis affects 20, 30, and in some cases 50 per cent. Nor is this the worst showing that can be adduced. I have seen single herds of fifty and sixty head in the healthy country districts of New York in which 90 per cent. are the victims of tuberculosis.

Experience has shown that this disease is propagated not only by direct inoculation, but by the consumption of the tuberculous flesh and milk and by the inhalations into the lungs of the virulent particles diffused in the atmosphere in water and spray. Nor does this complete the list of its channels of infection. I have recently witnessed in the biological laboratories of Europe the artificial cultivation of the tubercle bacillus on the freshly-cut surfaces of fruits and on sterilized bread, as well as on gelatinous preparations, and have seen the brute sufferers from tubercenlosis that have been inoculated from these cultivations. In the face of these evidences that we and our animal possessions are liable to contract this fatal malady by the various channels of simple skin abrasions, injection with our food, animal and vegetable, and inhalation with our breath, no one will accuse me of underrating the

Magnitude of the Danger,

nor of seeking to undervalue any available measure for its restriction. One stands in wonder that in this conclusion of the nineteenth century the subject should still be comparatively unnoticed and untouched by governments and by their local and national boards of health.

But great as is the need of sanitation in this field, and strongly

as it appeals to the moral sense as well as to the instincts of self-preservation of the individual and the community, the fact remains that the subject is too gigantic, the cost of restrictive measures too great, and the results promised us are too partial, to warrant the expectation that the government is prepared as yet to effectually grapple with the evil. The infected animals are scattered all over this great continent; they are found at least as abundantly in the herds of the countries adjoining us, and are liable to cross our frontier at any moment; the infection prevails not in one genus of animals only, but among all domesticated animals, especially the ruminants and omnivora; thus in men and domestic animals, we would have to inspect and control not less than 190,000,000 individuals scattered over an area of 3,000,000 square miles; but, in addition to all this, wild animals that successfully evade the domination and control of man suffer equally with the tame; the poison can survive and multiply, not only in a living animal medium, but also in dead vegetable matter; and, finally, man himself furnishes so many victims that, after we had done everything possible for the extinction of the poison in beast and vegetables, the sacredness of human life would still set a limit to our suppressive measures, and the virus would continue to be perpetuated everywhere in man, and at frequent intervals to be conveyed anew to the brute. Many millions might be spent on the affection to the great advantage of the community, with the effect of securing what might approximate to

A Temporary Extinction

of the active disease in the lower animals; yet, owing to the persisting consumptions among men, there would be no actual diminution of the infected area, and no one part of the country could be said to have been saved from the blighting presence of this disease. Critics would inveigh against the prophylactic measures with far more effect than they now do against the Jennerian vaccination, and, if unsupported by familiar contemporaneous instances in which contagious diseases had been completely extinguished, the sanitarians would find it hard to obtain a continued supply of the sinews of war, and to maintain the humani-

tarian conflict. A failure, after such a crusade had been inaugurated, would mean a staggering blow to all sanitary legislation, and a serious retarding of the immeasurable boon which, through this means, may be secured for suffering humanity. Great and ubiquitous as is the evil of animal tuberculosis, I would advise that, for the present, no veterinary sanitary legislation for its suppression be sought from the national Congress, but that the subject be, for a time, left in the hands of municipal health officers, physicians, and hygienists; in other words, let each individual and the local community adopt such protective measures as come within their power, or as the exigencies of their particular case may demand. All such isolated action is confessedly very imperfect, and comparatively ineffectual, yet it will be of vast benefit, and will prove a stepping-stone to that national control which, I trust, many now present may live to see, and which should aim at the entire extinction of this bane of civilization.

Turn to another of our great prevailing animal plagues. The so-called hog cholera or

Swine Plague

has become domiciled in all our great pork-raising districts. A few years ago the annual losses were estimated at \$20,000,000, a sum which implies at once a decimation of our 50,000,000 swine, and a general prevalence of the disease wherever swine are bred on a large scale. The great area involved in these ravages, and the number of contaminating herds and infected premises, would make any effort to stamp out this disease a herculean task. Again, though there is a presumption that this disease once extirpated, would be rooted out for good, still we are not yet certain that it does not arise indigenously in our own land, and that, after all our labor and outlay, we would not still be confronted by new centers of infection developed by unhealthy conditions among badly-managed herds. It is more than questionable whether Congress would appropriate the means necessary to stamp out the plague, and thoroughly seclude and disinfect all infected premises, and no one can doubt that it would be next to impossible to secure a continuance of such appropriation if the disease persisted in cropping out anew at frequent intervals, and

at short distances, after millions had been expended for its extinction. I dare not try your patience by introducing the question of the other contagious diseases of animals, such as glanders, the various forms of anthrax, milk sickness, diphtheria, actinomycosis, strangles, influenza, mange, and all the numerous and dangerous forms of animal parasitism. Suffice it to say that no one of these presents to us the same favorable conditions for a perfect suppression as does the lung plague of cattle, and for none can be promised the same speedy and absolutely permanent extinction. In this connection it is only just to state that Texas fever assumes a special importance in connection with its occasional

Exportation to Great Britain

in beef cattle. In this, as in the case of the lung plague, it is well at once to face the truth. The Texas fever has an average incubation or latency of one month, and even in cases communicated by inoculation this extends to ten days. It stands, therefore, side by side with lung plague in the impossibility of checking its importation by the simple expedient of a professional examination at the port of embarkation. It has been the rule for shippers from Boston and New York to have them examined prior to shipment; but this has not prevented the exportation of twenty-six infected cargoes in the course of the present autumn. It is folly to expect anything like absolute protection from a professional examination without detention in the case of such a disease, and to advocate such a measure is merely to invite discomfiture and discredit. No veterinarian who would be true to himself and his country would advocate such an examination as an effectual safeguard.

The only protection of our Northern herds and export cattle against the contagion of the Gulf Coast fever must be sought in the absolute prohibition of the movement northward of the cattle from infected districts, excepting in the depth of winter. This we must one day secure, and if it is possible to obtain from the present Congress a measure that will accomplish this, it will be a matter for profound thankfulness. But we need not close our eyes to the fact that the fear of such a measure on the part of

our Southern representatives has been a main cause of the defeat of every important measure for the stamping out of our animal contagia. While therefore strongly in favor of a law which will circumscribe the Southern or Gulf Coast fever, I am convinced that it will be highly injudicious to incorporate any such provision in a bill providing for the extinction of the lung plague. To do so is but to invite and insure defeat. Happily the Gulf Coast fever may be ignored for a year or two without fear of its becoming permanent in any of the Northern localities into which it is yearly introduced. Again, any measures which we can at present adopt do not look to its definite extinction, but only to its limitation to its present area. It is therefore as preposterous as injurious to continue to combine these two subjects in future Congressional bills. The lung plague question is a more urgent one in every sense. This disease is an exotic, and if extinguished once would only reappear in case of a new importation from an already infected country.

Its area of prevalence in the United States is so limited that it could be easily, with perfect certainty and (relatively to other contagia), quickly and cheaply extirpated. Unlike Texas fever, anthrax and tuberculosis, it is not propagated in the soil, etc., nor is it capable of indefinite preservation out of the animal body, and therefore may be easily extinguished. It is unlike the Texas fever in that it is comparatively unaffected by climate or season, and tends to persist in any locality into which it has once been introduced and in which susceptible cattle are found. Every day of its existence on our Eastern seaboard threatens our Western herds as far as the very coast of the Pacific. The infection of the fountain of our cattle trade means the infection not only of our roaming Western herds, but of all the channels of trade into which they gravitate, of all our stockyards, of all our Middle and Eastern States, and of our exports. Our present losses from this plague are about \$3,000,000. Our losses in case of the extension we are supposing could not be less than \$50,000,000, representing at five per cent. a capital of \$1,000,000,000. Worse than all, such a tax once imposed cannot be wiped out, as no land has ever succeeded in stamping out this disease among roaming herds on unfenced grazing grounds. It is this that is to be feared more

than anything else, and if we leave the seed of this scourge to propagate itself on our Eastern seaboard, this is what will happen to us sooner or later.

On every ground, therefore, of commercial economy, of financial foresight, of the attainability of the necessary legislation, or of the assurance of the complete and permanent extinction of the malady to be dealt with, it may be safely claimed that lung plague demands the first measure of veterinary sanitary legislation. To neglect it is to work a ruinous and irretrievable loss which must forever after bear an invariable relation to our growing herds, and with this increase would ere long reach \$100,000,000 in place of \$50,000,000 per annum. The restriction of any one of our other animal plagues may be postponed without the overshadowing dangers that threaten from the neglect of this, and no one of these plagues give the same assurance of a complete and early extinction of the poison under the application of the proper methods. To handicap any bill for the extinction of this disease with provisions for the control of any other affection I cannot but consider as ruinous to the cause not of anti-lung plague only, but of all veterinary sanitary legislation and work.

It is undoubtedly our duty as sanitarians and citizens to do all in our power to secure by legislation and every other available means the suppression of one and all of the animal plagues of which I have been speaking; but as it is impracticable to secure all this at once, as the demand of the whole would infallibly lose us the whole, and the lung plague is at once the most urgent and the best plague to deal with, and that on which we can go to work with the most perfect confidence of complete success, this should be provided for in a separate bill which should furnish ample power and means, and should have precedence of others.

(To be continued.)

CASTRATION OF THE STALLION AND CRYPTORCHIDE, WITH AND WITHOUT RESTRAINT.

I start with the proposition that, practically considered, the operation of castration of the stallion, (by various well recognized

methods) is one of the safest and simplest in veterinary surgery ; simple for the operator, and safe for the animals, always providing the work to have been properly and skilfully performed. And yet I know of many instances of graduates of veterinary schools whose "courage fail them" when called upon for the first time to make the operation ; a case in point being that of a recent graduate of Canada, who went quite a distance to answer to a call to castrate a colt, and after having had the animal *secured for him*, he allowed the colt to be again released without making even an attempt to operate.

" Our doubts are traitors,
And make us lose the ground we oft might win,
By fearing to attempt."

I believe the remedy for much of this lies with the schools, rather than with the graduates ; that they do not sufficiently by practical demonstration, instead of by theory, models, or drawings, instruct their operating classes, and that too upon the living subject, rather than the "dead one," the opportunity, for obvious reasons always being extremely limited to find the cadaver of the entire horse upon the dissection tables of our colleges. Having decided to operate, shall we cast our animal, (put him under restraint), or shall we castrate him in a standing position, without restraint? Both methods have strong adherents among many skilful practitioners, and both methods have some advantages, and also some disadvantages, with which I will endeavor to deal upon their merits. I have castrated a great many horses of all ages, without casting, and without any other means of restraint than the use of a twitch and a good man to hold it ; and while I am convinced there is no horse living but that can be safely castrated in a standing position—and I do not mean in stocks (such as are sometimes employed in the Western States)—there will always be a difference in their behavior, just as there is in horses while cast, for some will always struggle and maintain a state of high nervous excitement while under confinement.

If a stallion will allow his testicles to be freely manipulated while standing, I should ordinarily judge him to be a good subject to castrate in that position, and any judicious veterinarian

should submit all subjects to manual exploration, prior to operating, in his pre-examination for hernia, for if that were present, the horse should always be cast, and castrated by the covered operation. There is one advantage, however, in operating *without restraint*, that will be admitted by all practitioners, which is that it *obviates all risk of injury* by CASTING, which must always be taken into account in any operation upon the horse; and while I have never yet, to my knowledge, injured any horse by casting, I know that many valuable horses have been so injured and destroyed. Aside from fracture of the lumbar vertebræ, Williams mentions among other disabilities, "Paralysis, as in all probability due to some injury to the vertebræ or muscles of the back or loins, occurring while the animal is secured for operation." All the cases I have thus far seen so injured were cast with "English hobbles," and I have become so prejudiced against their use, that although I have two sets, I have made use of neither of them for several years, but use a "surcingle rig" instead, that folds the legs up securely, just as the horse lies down naturally in the stall, and that does not allow him to *bend his back*, which is the great risk in using any hobbles. A horse can be castrated more expeditiously in a standing position than any other; for one can be operated on in the time required by most any practitioner to cast his patient and put him into position, and it is not always that we can command suitable or sufficient help to cast a horse, neither do we have even a safe place provided for us, but, as we all well know, we often have to cast in a very unsuitable and unsafe place to do so, jeopardizing the safety, not only of the animal, but of ourselves. In casting, the risk of injury, often severe, sometimes fatal, is *always present*. No one will deny this, while the struggles of the horse, especially if he be of a sensitive or highly nervous temperament, is always highly suggestive to his owner of ringbones, spavins, curbs, etc., as the result of the operation, that I do not feel certain are not sometimes well founded, if not absolutely realized. I can well remember in my youthful days of seeing colts castrated, when as many men would be got together as it would take to "raise a barn," and with two or three hundred feet of rope, "pull and haul" their victim all

over the farm, only to keep him down for hours, while some boy was kept running "back and forth" to the kitchen fire, to bring an iron, "half hot" enough to do the searing which was the climax of the animal's tortures. And I have seen in my own city, since I have been in practice, two stallions, cast with "tackle and falls," kept down half an hour, the cord ligated with "shoemakers' waxed ends," and the sensitive "tunica vaginalis" then filled on both sides with powdered alum, and resulting within ten days, in the death of both animals with peritonitis, as I predicted at the time it would. I also know of an old and experienced practitioner, who was habitually complaining of his *bad luck* in castration, who always used a pocket-knife with which he cut his tobacco; and in addition to the blade being always "gummed up" with the "fascinating weed," it was always rusty.

A thorough knowledge of the anatomy of the parts being implied, I believe among the prime requisites of successful castration are, first, That the health of the animal shall be so far established that no seeds of disease are found lurking in his system. Second, That all instruments required for the operation be scrupulously clean, and the scalpel sharp and in perfect order. Third, That we do not operate in extreme hot or extreme cold weather, and that whatever mode we employ, the operation shall be expeditiously and humanely performed. There are various methods employed, and various instruments used by the profession, that have proved very successful in the hands of many competent men; and for the benefit of young practitioners, who have not yet decided what method they will employ, rather than the "old hands" who are already committed to some settled policy, I will endeavor to briefly and fairly compare them. Among the instruments most commonly in use are the wooden clamps (with or without caustic), cauterization, ligature, torsion, scraping, ecraseur and the "House Castrating Clamp." There is another method I have seen employed upon horses and other animals (a barbarous one at best) by charlatans and quacks, that of stretching or tearing out the "spermatic cord," until it breaks somewhere, which of course it will do if sufficient "main strength and stupidity" are applied to it. We know that the great testicular artery originates directly from the posterior aorta

and, together with its satellite vein, finds its entrance into the vaginal sheath, through the internal abdominal ring, into which it passes with other constituent portions of the cord, in its descent to the testicle. The cremastic artery, originating from near the external liac, also gains its entrance to the vaginal sheath and is distributed to various parts of the cord, so that we have two important sources of blood supply which are both severed by whatever process we amputate the testicle from the "vasa efferentia" and vascular cord. Of course the cord will break somewhere, but that it is just as likely to break above the internal inguinal ring, as below it, must be at once apparent. If the former takes place, death by internal hemorrhage is the almost inevitable result, and that is just what I have known to happen in two instances, where an illiterate and entirely incompetent man had been employed to operate on two valuable colts, one two and the other three years of age. As to the age of the animal when he can be most safely operated on to the best advantage, my own preference is to castrate when two years old, as after any manifestations of those phenomena which attend the age of puberty, they cannot be safely turned to pasture, and many young horses are ruined by being constantly kept up without exercise after that age, although I am of the opinion they can be castrated at most any time of life, if done in good weather so that they can afterwards be regularly exercised.

When ready to operate and having the testicle firmly in the left hand, and the skin drawn smooth and tense, a bold and free incision should be made parallel with the raphé and at equal distances upon either side, that will at once divide the external and serous coverings of the testicle and give us immediate possession of the gland. No hesitating, trembling hand should hold the scalpel of the surgeon, but as painless as possible to the overpowered beast, as exacting as the most skilful surgery demands, from those who are devoting their lives to that noble calling in which we are all engaged. One of the most ancient modes of operating, and one considerably in vogue at the present day, is that of *compression* by wooden clams (with or without caustic), and while the system has many warm exponents, I believe it to be open to many objections that do not attach to other methods. The leaving on of

the clamps for twenty-four or forty-eight hours after the operation, must always be more painful to the animal than methods which leave the termination of the cord crushed or twisted in a safe and much more expeditious manner, and an assistant (not always easily obtained) is also required to see that every part of the cord is uniformly subjected to the clamps and that they are securely tied, and should they then not be fixed completely above the epididymis, much additional pain would result, not at all unlikely to be followed by champignon. The latter difficulty has also often been encountered where the operator has neglected while removing the clamps, to separate the adhesions which always take place between the cord and the lips of the wound, so that it is not safe or even wise to leave their removal to the owner or groom, who may be heedless or incompetent, and thus perhaps bring unmerited reproach upon the surgeon in charge. *Cauterization*, at the present time is mostly confined to country gelders and others whose knowledge of more scientific methods is extremely limited. As a rule the entire cord and its envelopes are divided by the edge of the iron, but a much more surgical mode of procedure is the division of the cord with the knife, and the application of the budding iron to the mouth of the spermatic artery, leaving untouched with the actual cautery, every other part. One great objection to cauterization is the difficulty of having your iron at a white heat, which, if it is not, it adheres to the eschar, and detaches it, so that hemorrhage is very likely to be encountered, and violent inflammation and its consequences are also liable to be induced.

(To be continued.)

FOOT AND MOUTH DISEASE IN KANSAS.

Report of Dr. A. A. HOLCOMBE, Veterinary Inspector U. S. A.

NEOSHO FALLS, WOODSON COUNTY, KANS., }
 March 10th, 1884. }

To the Governor of Kansas :

SIR—I have the honor to report herewith the results of my investigations into the nature, cause and progress of the disease existing among the cattle of this neighborhood.

By permission of General Augur, U. S. A., commanding the military Department of the Missouri, I reported to you in Topeka on the 5th inst., and received verbal instructions to proceed to this point without delay. I arrived here on the 6th inst., in company with yourself, Col. Wm. Simms, Secretary of the State Board of Agriculture, and a delegation of citizens from Emporia.

I first inspected the herd of Daniel Keith, located four miles northwest of Neosha Falls, in Coffey County, Kansas. The history of this herd is as follows: It consists of 120 head, the most of which are yearlings, the remainder comprising a few cows and two-year old steers. All these animals were picked up in the surrounding country last autumn. The last lot of 60 was received on Dec. 10th, '83. All were apparently well until after Christmas. Sometime between the 25th and 31st of December, five of the yearlings were seen to be lame, and to present a more or less swelling of the affected feet. A day or two afterwards six more were found with similar symptoms. After a time it was noticed that the feet affected showed signs of sloughing at the coronet or at the fetlock joint. This result was attributed to freezing of the diseased members. Notwithstanding the favorable changes in the weather, the disease continued to spread until at the time of my arrival 60 were, or had been, affected. I made a critical examination of a large number of both the well and the sick. A typical recent case, said to have been sick four or five days, was a two-year-old white-faced steer. He presented the following symptoms: There was considerable lameness and swelling of the right hind foot, which presented a single vesicle on the skin at the base of the cleft between the hoofs. I touched it with my finger, when the fluid escaped, leaving an oblong superficial ulcer. The foot was hot and tender to pressure, while the swelling extended as high as the fetlock joint. The temperature, taken in the rectum, was $104\ 2\text{--}5^{\circ}$ F. An examination of the mouth revealed three small vesicles and one recently formed ulcer on the mucous membrane of the lips and gums.

Another case, said to have been affected about ten days, was a red yearling steer, with the right hind foot suppurating at the

fetlock joint, while the parts below were dead. The mucous membrane of the upper and lower lips, and of the gums and palate as far back as the second molar tooth, showed numerous ulcers, varying in size from a large pin-head to a lima bean. These ulcers were of a pale reddish-purple or yellowish-brown color. On preparing to take the temperature the patient defecated, revealing on the mucous membrane of the rectum a small ulcer, from which a small quantity of blood escaped. The temperature stood at 104° F.

Another case, said to have been one of the first affected, was a white yearling steer. He refused to get up, was greatly emaciated, and suffering intense pain. The right hind leg presented a stump at the fetlock joint, which was covered over with a dark brown scab, from beneath which escaped a thick, yellow pus when pressure was applied. The stump was tender and swollen about half way to the hock. The left hind leg was swollen, hot, and intensely painful as high as the fetlock. The toes stood wide apart, showing a tense, yellowish skin at the base of the cleft, beneath which could be felt collections of pus. The hoof of the outside toe was detached at the heel, undermined with pus and nearly ready to drop off. The bone was dead on the surface where exposed. The mouth showed several ulcers, some healed, others nearly so. The temperature was 102° F.

These three cases are fairly illustrative of the disease as it exists here in its various stages. In some cases the mouth lesions are comparatively slight, while the feet are seriously affected, and *vice versa*. Some have lost a single toe, some both toes, some two feet and one three feet. The older the animal the less disastrous does the disease appear to be. A cow, with a calf at her side about ten days old, took the disease, presenting vesicles and ulcers of the udder as well as the mouth. Three days after the cow took sick the calf died with all the symptoms of the disease in its early stages.

The second herd inspected belongs to Mr. Goodrich of Kansas City, Mo., and is situated on the opposite side of the highway, about one hundred yards from Mr. Keith's place. The first cases appeared about four weeks ago, and the number affected at

the time of my first visit was thirty-five. But two of these are worthy of special mention. One is a red yearling steer, with one foot affected, showing ulcers on both lips, the gums, tongue and on the roof of the mouth back to and including the soft palate. The other is a two-year-old heifer that will lose all four feet.

The third herd infected is situated about $2\frac{1}{2}$ miles south of Mr. Keith's place, in Woodson County, and belongs to John W. Beard. On my first visit there but three cases were seen, one having died. The herd comprises 75 animals and has been infected about two weeks.

Regarding the nature of the disease there can be no question but that it is a contagious one. This is shown by new outbreaks in the herd first infected, the spread of the disease to the herd across the highway, and finally to Mr. Beard's cattle by the purchase of a cow from Mr. Keith's farm. That it is *Foot and Mouth Disease*, or Epizootic Aphtha, cannot be doubted when the symptoms are considered. For, to recapitulate, the various diseases show—vesicles and ulcers of the mouth, vesicles and ulcers in the cleft of the foot, suppuration and sloughing of the feet, ulcers of the rectum, vesicles and ulcers of the udder, diarrhoea, a temperature varying from 101° to $105\ 2.5^{\circ}$ F. and marked emaciation, even when the appetite is good.

How the disease originated I am, as yet, at a loss to know. Foot and mouth disease, in the past, has never appeared in this country except when brought here from Great Britain or Europe. That it can originate spontaneously I do not believe, for a long series of observations have shown that specific diseases cannot be produced except the specific virus is present in the system, and that this virus is always the product of a like pre-existing virus. That the disease was brought to Mr. Keith's herd I am fully convinced, but when, how and where from my investigations to the present time do not permit me to say.

On the 7th inst. three new herds were reported infected. I visited them and found the reports groundless. Since the 6th inst. twelve new cases have appeared in Mr. Keith's herd, and four or five in Mr. Goodrich's.

The infected district has been surrounded with quarantine notices, but to all intents and purposes they are inoperative. That the disease will soon appear in other herds, unless efficient measures are adopted for the eradication of the malady, is patent to all who are acquainted with the past history of foot and month disease. In my opinion the infected herds should be destroyed, and the infected premises quarantined against all cattle, sheep and dogs for a period of one year. The bedding, manure, hay, fodder, etc., should be destroyed with the cattle, and the stables and sheds thoroughly cleaned and disinfected. The disease is now so near the great cattle ranges, to which it might readily be carried and where its disastrous effects would be incalculable, and its eradication impossible, that a delay of action is most dangerous to the great interests at stake.

Since making the above report two additional herds have been discovered infected. One belongs to C. Pribbernow, living twelve miles south of Neosho Falls. His herd consists of 165 animals, fourteen of which show symptoms of the disease. Of these fourteen eight will lose from one toe of one foot to both hind feet at the joint above the coronet. Some of the recent cases show several ulcers of the mouth. The disease made its appearance among these cattle on or about Feb. 10th, 1884. Those best cared for were some of the first affected. No explanation of the outbreak can be given, unless it be one entertained by Mr. P. He believes a flock of ducks carried it from Mr. Keith's farm to the stream where his cattle drink.

The other infected herd belongs to James O'Toole, of Hartford, Lyon County, Kansas. The herd comprises 152 animals. Ten at least have been affected. Four have lost portions of a leg each. All are old cases, one only showing well marked month lesions. A portion of this herd was sold and distributed around the country about ten days ago. No origin of the outbreak is known. This farm is about 30 miles from the other infected district. All the infected farms are in strict quarantine. Some of the badly diseased have been killed, the sick separated from the healthy, and the other precautions adopted to confine the disease to its present locality. Effective measures of eradica-

tion will soon be adopted, for the Legislature has been called together in special session to provide the necessary laws and means.

REPORTS OF CASES.

FATAL CASE OF NEUROTOMY IN A MULE.

By WM. R. HOWE, V. S.

ON Nov. 29th, Mr. A. L. Bauman, of this city, called me to see a mule. On examination, I found it to be a bad case of navicular arthritis. I told the owner I could do nothing to effect a cure, but on speaking of neurotomy, he thought favorably of it, so arranged to operate.

Dec. 1st gave mule bran mash for breakfast; no dinner; at 2:30 P. M. gave chloral hydrate ℥ ii. in mucilagenous solution; at 3 o'clock P. M. gave morphia sulph. grs. ii. by hypodermic injection and cast; mule was very stupid and struggled very little; made incision, and on feeling for the nerve the animal was quiet, but when the nerve was first touched he struggled violently, urinated and passed considerable flatus, but as soon as the nerve was taken hold of the mule literally stopped breathing.

Artificial respiration, cold water and intrilations of ammonia was tried, but with no effect—the mule was dead.

On post mortem examination, found everything normal, except two small clots of blood on posterior part of cerebellum, one on each side and pretty well back. Not having things convenient and the weather being very cold, no further examination was made. I was convinced the mule died from hemorrhage of the brain.

If we can take one case for an example, I would say that mules being know as very timid animals and unable to stand severe punishment, are poor subjects for painful operations.

LUXATION OF CERVICAL VERTEBRÆ,

By J. P. KLENCH, V. S.

I have met lately with a case which I consider very interesting and very important to all persons connected with veterinary

science, the more so, as it is of very rare occurrence. For these reasons I desire to lay it before the readers of your valuable paper.

A heavy, valuable mule was found one morning laying down in her stall with the hind left postern caught in the halter-strap; the head was pulled backwards to near the point of the shoulder, and after the halter was made loose, it was discovered that the mule could not straighten the neck nor get on her legs without assistance.

Before progressing further in the description of this case, I wish to state that the proprietors, doing an extensive lumber business, had lost all confidence in veterinary surgeons on account of the misdoings of a quack doctor who had charge of their horses for several years, so much, that for over a year no horse had been subjected to a regular treatment in the stable. Thus it was that this mule was left without any professional assistance for eight days, when they concluded to destroy her. But other parties told them that I was a graduate veterinarian who had been here only a short time, and advised them to give me a trial. I answered their call and found the mule in the following condition :

The head was turned to the left side, one eye looking forward, the other backward, the nose being held lower than the knees; mule unable to raise the head higher than the point of the shoulder, even with assistance; any effort made to raise the head or straighten the neck was painful and caused the animal to move backwards. The right side of the neck showed a hard prominent swelling, corresponding to the last four cervical vertebræ, while on the left side a deep excavation was found, extending from the third vertebræ to the space between the first two costal ribs. When left alone, the mule turned around in a circle, moving always to the left; when led straight forwards, she moved the left leg freely, but the right leg made a very short step, and at every 15 to 20 steps the animal wanted to stop. I was furthermore informed by the stableman that most every night the mule laid down, but could not get up without help. I stated to the proprietors that the mule had a luxation of the last four vertebræ of the neck, and the same must be reduced by a very powerful action calculated to counteract the contracting efforts of the

muscles of the animal. They gave me *carte blanche*, and so I proceeded to prepare for the operation at once.

I put the mule in a strong stock used by a blacksmith in the neighborhood to shoe dangerous and vicious horses; a strong collar was applied to her neck and tied with strong ropes to the four posts of the wooden frame; two long ropes were properly attached to the head and held by six men, while I and another man stood ready on the right side to push with our fists on that hard substance. A good, strong pull together on the head of the mule, a few good hits with our fists on the neck, and lo! several cracks were heard and the neck was straight; half a minute was the time required to do it.

The head was then tied up for three days so as to keep the vertebræ from slipping out again, and the fourth day the mule was put to work and has worked well ever since.

Conclusion.—Luxation without fracture of the neck for eight days; reduction of the same without causing paralysis or death.

EDITORIAL.

FOOT AND MOUTH DISEASE.

In the September number of 1883, of the REVIEW, the United States Treasury Cattle Commission stated that "there was strong evidence of the non-existence" of foot and mouth disease in the country. The statement was made in the report of inquiry elicited by the Treasury Department in connection with new restrictions which were established in England against American importation. But six months have elapsed and the report of an extensive outbreak of that disease soon spread not only in Maine, at Portland, but was also later on reported as existing in a most virulent form in Kansas, if we are to believe the reports which we publish to-day from Veterinary Inspector Dr. A. A. Holcombe. As often the case, in such instances, a general panic followed, and extracts of newspapers soon gave notice of its appearance in other states—Illinois, Missouri, Iowa; fortunately, however, these were not substantiated and cannot be depended upon, as

they were neither made but were contradicted by veterinarians.

We remain, however, in the presence of two outbreaks, one in Portland, which has been at a too late hour acknowledged by the proper authorities whose duty it was to prevent the introduction, and the second in Kansas, where a veterinarian, well-known to us, has made a positive diagnosis of the foot and mouth disease, and presented his reasons for it to the profession in the report which we publish to-day. His position is, however, denied by Dr. Salmon, Veterinarian of the Agriculture Department, who states that after thorough investigation he has concluded that it is not the genuine foot and mouth disease, and that there is no danger of it spreading, (a conclusion which seems to be well sustained by the various non-official statements that we have received at a late hour.)

In the presence of such widely differing statements from two veterinarians well known to the community, the profession will have to wait to decide as to where the correct diagnosis exists—for the official report of Dr. Salmon or for the *missing link* which will explain the appearance of the disease in such a remote part of the country.

So long as it existed in Maine, so long as it was allowed not only to enter but to spread, there is a possibility that it might have been allowed to extend to Kansas, and the affirmative evidence that the disease can be traced to Portland will certainly prove too important to Dr. Holcombe for him not to exert his greatest power of investigation and prove himself right before the profession. It is much to be regretted that Dr. Salmon has not been able to offer us the opportunity to publish his report, with that of Dr. Holcombe; but as yet in this country professional information has to take second place before political orders; we will have to postpone to a later day the result of his investigations.

Leaving aside, however, the influence these outbreaks may have upon our exporting trade, and while we regret that it is no more possible for us to keep the position assumed by the report of the Treasury Cattle Commission in September last, correct as we believe it to have been, there is one fact that, as lovers of our

profession and ambitious as we are of its elevation and progress in America, we must appreciate, which is the influence that the appearance of these various diseases have had upon the appreciation of veterinary science—already illustrated by the steps which are being taken in various States for the appointment of State Veterinarians. Laws are presented to the various Legislatures, funds are liberally provided, and regularly educated veterinarians are appointed to positions of trust, which, if properly attended to, will guard us against the spreading of contagious diseases which we can import from Europe, and specially from England, as has been the case in this Portland outbreak. We cannot help observing, however, that so far as our knowledge goes, the great States of the East remain as yet unaffected by *this* benignant contagion. Kansas, Iowa, Illinois, Wyoming Territory, Maine, already have, or will soon have, their State official veterinarians; but New York, Massachusetts, and, we believe, Pennsylvania, have not. Comments upon this condition of affairs are unnecessary. Action, however, ought to be taken—unless, unsatisfied with what contagious diseases we already have, our authorities wait for the importation of rinderpest before taking the proper steps to establish an adequate sanitary veterinary service.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of the above Association was recently held in Boston at its usual place, and we feel it a duty to record that there never was a larger meeting, nor one where more interest was exhibited by the members present. We publish the full account sent to us by the Secretary, and we have no doubt it will be carefully read and appreciated by our readers.

Amongst the important subjects which were presented, one received the principal attention of the meeting, as it was expected it would; it was the question of the outbreak of foot and mouth disease in Maine. Important statements were made by the veterinarians acquainted with two of the quarantine stations, at Garfield and for the port of Boston. Serious inquiries were made by State Veterinarian Dr. Bailey, and a severe vote of cen-

sure by almost the unanimous vote of the members present was passed upon the deficiency of the system now in existence. Will any good be derived from this action, from this expression of feeling in matters in which all those present are more or less competent to speak? We do not know, but if they are not, if the general government remains deaf to the sense of the motion passed at the meeting, it seems for us that what remains to be done is to remind the delegate of the American Government to the fourth International Veterinary Congress, lately held in Brussels, of the resolutions there adopted, and which we believe he ought to strongly impress upon those in power, and that unless carried out, would justify any veterinarian to decline from serving as official appointee.

REGULATIONS FOR ADMISSION TO THE CIVIL SERVICE OF THE DEPARTMENT OF HEALTH OF THE CITY OF BROOKLYN.

It is with much pleasure that we notice these regulations (sent to us by the able Commissioner of Health, Dr. J. H. Raymond), and we do it as a compliment to one who by this action shows his appreciation of the requirements of a good civil sanitary service and of the importance of veterinarians being connected with it. These regulations inform us of the creation of the position of Veterinary and Food Inspector, and the filling of such by a regular graduate of veterinary medicine only.

At last the time has come when educated veterinarians will have their recognition in Boards of Health—no more as a compliment, but as regularly appointed officers.

NOTICES.

NEW YORK STATE VETERINARY SOCIETY.

The Executive Committee of the New York State Veterinary Society, which was to call a mass meeting of the veterinarians in the State to consider the propriety of obtaining legislative action to regulate the practice of veterinary medicine in the State, has

decided to postpone this meeting for further action on account of the short time remaining before the adjournment of the Legislature.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

Members of the United States Veterinary Medical Association who have not received their certificates of membership and all those who have not paid their initiation fee are requested to send their address to the Secretary, Ch. B. Michener, 269 W. 38th St., New York.

TO OUR SUBSCRIBERS.

On looking over our list of subscribers we find that quite a number of them have omitted to send us the price of their subscription, many for one, and a few for a larger number of years. We would be obliged to the delinquents for a post-office order to Station "G" for the amount due and for a request for a renewal of their subscription.

CROWDED OUT.

On account of the crowded condition of our pages, several interesting articles and important communications must be postponed for future publication.

PATHOLOGICAL PHYSIOLOGY.

VACCINATION OF HOG CHOLERA WITH MORTAL VIRUS ATTENUATED.

In the *Academie de Medecine*, of Paris, Mr. Pasteur, in his own name and that of his collaborateur, Thuillier, presented a report upon new researches made in the vaccinations for hog cholera. Referring to the discovery made by Thuillier, of the microbe of that disease, he said that numerous experiments in preventive inoculation had since been made, which had led to the

following conclusions: 1st, Epizootic cholera, even the most virulent, can be prevented by inoculations of attenuated virulent virus. 2d, The duration of immunity extends beyond twelve months, and is sufficient for the requirements of the raising of swine, as the period occupied in the fattening of the animals does not usually extend beyond one year.

However, added Mr. Pasteur, notwithstanding these happy results, I regret that the question of the appropriation of vaccines to various breeds requires yet new observations, before vaccination can become generalized. In waiting for definite results, I desire to make known at present the method which we have used to attenuate the virus of cholera.

The observations made in my laboratory have established the fact that viruses are morbid entities, but that they may affect forms and also physiological properties according to the media in which they live and multiply, and consequently, though virulency belongs to microscopical living species, it is essentially susceptible to modifications. It may be attenuated or increased, and each of these conditions is capable of being fixed by culture. A microbe is virulent for an animal when it has the faculty of multiplying in its body, like a parasite, and of giving rise, while reproducing itself, to disorders which may result in a fatal issue. If, for example, the microbe which has lived in an animal of any given species has passed out of one individual of that species to penetrate into another of the same nature, without having in the interval changed by any sensible external influence, the virulency of this parasite can be considered, so to speak, to have acquired a fixed maximum potency for the individuals of that breed. The parasite of anthrax, for instance, which is special to sheep, varies but little from one subject to the other and from one year to another for a given country. This may no doubt be accounted for by the hypothesis that through the various transmissions from sheep to sheep, the parasite has become accustomed to live in sheep in a state that may be called definite. But the virulency that has not yet reached its maximum of power may be essentially modified by its passage through a series of individuals of the same breed, and I repeat that when we have tried to endue

the vaccine virns of chicken cholera and of anthrax, and also of other diseases, with a virulency progressively increasing, and to bring them finally to their maximum degree of virulency, we have inoculated them to young animals and then successfully to older ones.

I may observe, in passing, that these results restore the virus-microbes to their place under the general laws of life and its manifestations in the superior vegetable and animal species. These manifest their plasticity, if we may so call it, under the influence of the conditions of the media where their successive generations have taken place. The only difference between the microbes and the superior species would consist in the rapidity of the variations in the virus, which is very slow in the large kinds. Each culture of a virus, had it existed but for twenty-four hours, would have represented immense numbers of successive generations, while in creatures of higher rank thousands and millions of years are required for the formation of a similar succession of generations.

If, however, changes in the virulency of our attenuated virus, or vaccine virus, may result from their passage in subjects of the same breed, is it not possible that a virus which has arrived at its completed state for one breed to be modified in its virulency by passing to another breed?

The answer of experience seems to be in the affirmative. The Academy will remember the virus microbe which we found some time ago in the saliva of hydrophobs. While very virulent for rabbits, it, on the contrary, showed itself harmless for adult guinea pigs, though it rapidly kills pigs only a few hours or a few days old. In carrying the inoculations from mature guinea pigs to younger ones, we have seen the virulency increase and easily acquire the power of killing old ones, and the lesions themselves have changed in a notable manner. We now return to the facts that I have just referred to, namely, an increase in the virulency by the successive passages through individuals of the same race.

But the new and unexpected result that I desire to mention consists in this; that the microbe, after having reached its virulency by successive passages through the bodies of guinea pigs,

shows itself again less virulent than it was at first towards rabbits.

In these new conditions, it gives to rabbits a disease spontaneously curable, and, moreover, renders the animal, when recovered, refractory to the mortal microbe of a rabbit. Hence this important conclusion; that the habit once acquired by continued lodgement in a species (as the guinea pig) and which corresponds to a given virulency, may change this property as it relates to another specie (the rabbit), and so diminish it as to render it a proper vaccine for the latter species.

This result is of an importance which cannot escape the attention of any observer, for it contains the secret of a new method of attenuation which can be applied to some of the most virulent forms of virus. Allow me to give you an example and an explanation :

Here are the very curious results of the inoculations of hog cholera, made upon pigeons on one hand and upon rabbits on the other.

If one inoculates the microbe of hog cholera in the pectoral muscle of a pigeon, the bird dies in six or eight days, after presenting the external visible symptoms of chicken cholera.

When the blood of this first pigeon is inoculated to a second, the blood of this one to a third, and so on, the microbe acclimatizes itself in the pigeons. The symptom of ball shape, the sleepiness, habitual manifestations of the disease, appear in much less time than in the first animals of the series. Death also becomes more rapid; and again the blood of the last pigeons is much more virulent for swine than the most infectious products taken from an animal that has died from spontaneous disease.

The passage of the microbe of hog cholera in rabbits brings us to another result. The infectious products of a pig that has died from the disease, or their cultures, inoculated to rabbits, always produce sickness and most generally death.

If hog cholera is inoculated from rabbit to rabbit, the microbe becomes acclimatized in them. All the animals die in a few days. The cultures of the blood of these rabbits in these sterilized media becomes gradually easier and more abundant. The microbe itself

changes its aspect, becomes a little larger and approximates the figure 8, without the filiform elongation of some of its cultures.

If we inoculate swine with the blood of the last rabbits, as compared with that of the first series, we shall observe that the virulency has been progressively diminishing from the first rabbit to the following ones. Very soon the blood of the rabbit inoculated to swine fails to kill, though it produces sickness. After their recovery, they are vaccinated against mortal hog cholera.

This new method for the attenuation of some species of viruses, even the most virulent, without doubt merits the attention of the Academy.—*Gazette Medicale*.

EXTRACTS.

CANCER IN DOMESTICATED ANIMALS.

Notes on Comparative Pathology, BY W. H. BIRCHMORE, M.D.,
Carbondale, Kansas.

At present, when the relations between the diseases of man and his dependent cousins are being realized and brought to notice, and influencing many minds for their advancement in learning and to the broadening of their field of view, an account of cases such as the following needs no apology for intruding itself on the time of the thinking portion of the medical profession. Their clinical interest is not so certain, but *a priori* it may be questioned if the food from animals in whose bodies degraded material processes are going on can be any more edifying than the mental pabulum of the same description is by some held to be. If the existence of a mammary cancer in a woman would, in the judgment of a thoughtful practitioner, be good cause for doubting the advisability, surely the existence of cancerous ulceration in the udder of a cow would be good cause for the disallowance of the use of her milk for the food of young children.

The investigation whose results this paper offers was undertaken to obtain material for the inflammatory origin of tumors. But time went on its way, the paper was never written, and now it is offered as a contribution to the general stock-in-trade of the

pathologist. Its intrinsic interest is not lessened, even if it is regarded as a curiosity only; but it also indicates that, besides enteric fever, pneumonitis, and tuberculosis, another vice of nutrition is shared by us all.

CASE I.—A chicken whose humerus had been broken. Three months after, a lump the size of an egg was present. In the center of this mass the ununited fracture could be perceived. Death followed from exhaustion after some months. The lump was a very finely developed, large, round-celled sarcoma. The cells were in nests proliferating, some multinucleated. There was no proper callous formation, but the ends of the bones were swollen, softened, and covered with the cell-deposit. The lymphatic glands were not inflamed. The tumor weighed 64 grammes.

CASE II.—An old hen. Feet frost-bitten. A piece of superficial tissue about two centimeters in diameter came away from one foot. The resulting sore was treated with the compound tincture of benzoin and fresh lard, equal parts, made into an ointment. The right foot healed completely; the left nearly so. This hen hatched a brood of chickens in the spring. The next time I noticed her, about midsummer, she was moving in so peculiar a manner that I caught her, made an examination, and found the left sole occupied by an elastic mass of about the size of a pigeon's egg. The leg soon became useless, and the hen died marasmic. On post-mortem, I found the lymphatic glands enlarged, containing multinucleated cells, the stroma proliferating *pari passu*. The extremity of the tarso-metatarsal bone was a mass of encephaloid disease.

CASE III.—A capon. I removed the glands by the usual operation. The capon died, at the end of three months, of acute peritonitis. He was as large as a turkey. The post-mortem showed that the peritonitis was caused by the bursting of a cyst containing some irritant fluid, which cyst formed part of a tumor as large as an egg, occupying the place of the right testicle. This tumor was an adenoid sarcoma. The size of the tumor was remarkable in view of the capon's development.

CASE IV.—A fine setter. Wounded in the mouth by the

discharge of a gun. The canine tooth on the lower jaw, right side, was so loosened as to be disengaged by very gentle handling. Ulceration of the socket followed, and after a considerable period a tumor grew, whose size made the dog so miserable that he was allowed to die. The microscope sections thence obtained might have served as originals for the drawings of osteo-sarcomas shown in the books.

The next four cases of which I have memoranda were in horses and mules, the result of injuries from the abuse of bits. In one of them there was an exostosis, or else a sub mucous thickening of the roof of the mouth. The animals were otherwise in good condition.

My next was a large, mixed spindle- and round-celled sarcoma from the lower lip of a mule, caused by the irritation of the bit.

CASE X.—A papilloma, irritated by the rubbing of the bridle behind the ear of a horse, became ulcerated. I removed it and obtained some excellent sections of a connective-tissue tumor, with nests of pseudo-epithelial cells.

CASE XI.—Last spring, while visiting a patient, I learned that one of his cows was "snake-bit." Investigation showed an ulcerated mass on the udder that macro- and microscopically answered to a nodulated mammary cancer.

A case of a gastric tumor in a pig was offered at the Chicago meeting of the American Society of Microscopists.

Epithelial tumors at the point of the shoulders in abused horses are not very scarce.

Engorgement of the lymphatics of the base of the tongue following wounds that healed by leaving an indurated cicatrix have passed under my notice; also one case of a lump, of the size of a fist, that formed about the parts pressed against by a ring in a bull's nose. There was nothing destructive about this tumor, but its evident inflammatory character renders it worth mentioning.

Villous tumors of the intestine are not infrequently found in hogs.

The fact that lymphatics may swell and become indurated in

pigs as the result of dysentery, and then present a very suspicious appearance under the microscope, opens a field that needs farther investigation. From my own study in this direction, I am inclined to the conclusion that, as all nutritive processes as a rule are more rapid, and healing processes are more complete, in the lower animals than in mankind, interruptions and maldirection of these processes are productive of less disastrous results. Still there is evidence to be found among them, and among them alone, that makes the *modus vivendi* of the tumor brotherhood much clearer than in man. In dumb animals only can we find very young growths and remove them at our will, or remove all the neighboring tissue and appreciate its relations.

Any persons knowing of similar cases will confer a favor by sending descriptions and either drawings or sections showing the microscopic anatomy. Specimens, where they can be obtained in masses of one cubic half inch, will also oblige. There is need of much more knowledge than we have in relation to these troubles—their ætiology—and the only way of obtaining it is by the study, not of books, but of the things themselves.---*New York Medical Journal*.

COMMENCEMENT OF THE AMERICAN VETERINARY COLLEGE.

The annual commencement exercises of the above named institution took place on the 4th of March at Chickering Hall, which was crowded to excess by the friends of the college, of the alumni, and of the graduates. The occasion was almost equivalent to a manifestation of the success of the institution and a public approval of the action which has taken place lately in the veterinary world—the transfer of the Columbia privileges to the care of the American Veterinary College.

On the platform the Board of Trustees was well represented, surrounded by the faculty and several other gentlemen friends of the profession.

The graduating gentlemen who received their degrees were: F. S. Allen, B.S., of Mass.; A. E. Brum, D.V.S., of N. Y.;

A. D. Galbraith, of Indiana; E. G. Gilbert, of Pa.; W. H. Gribble, D.V.S., of N. Y.; J. Hamlin, D.V.S., of N. Y.; A. H. Helme, of N. Y.; W. G. Hollingworth, of N. Y.; S. N. Krowl, of N. Y.; M. E. Knowles, of Indiana; E. L. Loblein, of W. Ind.; M. J. Otto, of Mass.; M. A. Pierce, of N. J.; E. C. Ross, of Conn.; J. E. Ryder, of N. Y.; O. W. Snyder, of Ills.; T. W. Spranklin, of Md.; R. A. Stoute, D.V.S., of W. Ind.; N. P. Valerius, of Wis.; A. G. Vogt, of N. Y.; H. Vreeland, of N. Y.; T. E. White, of Mo.

The various prizes were bestowed as follows:

The Board of Trustees prize, consisting of a gold medal for the best general examination before the faculty in the various departments of the curriculum, was given to Dr. Edward C. Ross, of Connecticut. The prize of the Alumni Association, consisting of a set of veterinary books for the second best general examination, was won by Dr. Hamilton Vreeland, of New Jersey. A gold medal, offered by the New York State Veterinary Society for the best practical examination passed before a committee of veterinarians appointed by the Society, was also obtained by Dr. H. Vreeland. This prize is offered for competition to all graduates of any veterinary college or university in the State of New York. The first anatomical prize, offered by Prof. A. Liantard to the senior student who presents the best series of anatomical specimens, was given to Dr. A. H. Helme, of New York. The anatomical prize of a silver medal, to the junior student who passes the best examination in anatomy, was won by Mr. H. F. Doris, of Pennsylvania. A silver medal was granted to Dr. E. G. Gilbert for the best paper presented to and discussed by the College Association. This prize is given by the President of the Society, Prof. C. B. Michener.

The valedictory address was delivered by Dr. Hamilton Vreeland, after which Rev. Dr. J. P. Newman addressed the graduating class in appropriate words of advice as to the standing and importance of the profession, and their conduct in their future professional life.

The spring session of the college, which opened the day following, is now attended by more than 40 students.

GLANDERS.

WHAT IS BEING DONE BY THE DEPARTMENT OF AGRICULTURE TO STAMP OUT THE DISEASE.

From the *Winnipeg Free Press*, Manitoba, Canada, Feb. 13, 1884.

From information received from correspondents in different parts of the Province, there is every reason to fear that glanders is exceedingly prevalent among horses. This disease is invariably fatal in its effects, is highly infectious and contagious, and dangerous alike to man and beast. In the absence of any practicable law relating to diseases of animals during the earlier settlement of the Province, glanders appears to have secured a foothold. It is, however, gratifying to know that the Department of Agriculture, Statistics and Health has commenced a vigorous campaign with the object of securing its eradication. The utility of the new law passed by the Legislative Assembly last session has already become evident. Since then a Veterinary Sanitary Service has been established as a branch of the Department, with a consulting veterinarian as adviser of the Department and fifteen district veterinarians acting in different counties. These have been instructed to rigidly carry out the law, and it is hoped that further spread of the disease will be averted. Many of the public are probably not aware of the serious results which would arise if prompt measures were not taken to stay the progress of the disease. The State of Illinois was visited last year by an epidemic of glanders which proved so destructive to horses and included so many human beings among its victims that the State Legislature voted a special appropriation of \$25,000 to secure its stamping out. It is hoped that such an expenditure will not be necessary in Manitoba, but the people of the Province will no doubt endorse any reasonable expenditures incurred.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The twenty-first semi-annual meeting of the United States Veterinary Medical Association was held at Young's Hotel, Bos-

ton, on Tuesday, March 18th, at 10 o'clock, the President, Dr. W. B. E. Miller, presiding. About forty members were present.

The Comitia Minora recommended to the Association, as members, only those candidates present, the absentees to be admitted at the next meeting in September. The Comitia Minora further advised the election of seven Censors in the future. It was decided to ask the Association to use its influence to have the veterinary profession better represented in Government appointments.

The committee appointed to investigate the Pastenr method of inoculation thought its powers should be enlarged and made to comprise other and similar methods. The Association then listened to a very interesting report by Dr. Hoskins of the Committee on Intelligence and Education.

Prof. Liautard also gave his report as delegate to the Fourth International Veterinary Congress. The Committee on Diseases made a verbal report, mentioning the principal diseases prevailing, etc.

By motion, the Secretary was instructed to cast the ballot for the applicants for membership. Eugene Burget, V. L. James, and R. S. Huidekoper were admitted as members of the Association. The entire afternoon and evening were taken up by essays and disussions. Geo. H. Bailey, D.V.S., read the first paper on "Castration of the Stallion and Cryptorchide, with and without Restraint." This paper elicited a lively and earnest discussion in reference to the best means of restraint, the methods of operating, relative safety of, etc. etc. Dr. Bailey showed his hobbles and urged their greater safety over the ordinary hobble in use.

The existence of foot and mouth disease in this country then came up for discussion. There was no doubt expressed but that this disorder was imported. That a certain lack of ordinary care exists with inspectors of ports was held by most, if not all present, as the cause directly of the spread of this disease in Maine. Several members spoke of the carelessness or inefficiency of the present official veterinary surgeons. Our quarantines as conducted at present are in no sense what they should be. Cattle are allowed to leave the quarantine stations, to be driven on public

highways to and from water. From the small size of these stations, some cattle upon landing are allowed to go *at once* to their destination. There is no effort made to disinfect cars in many instances. Other irregularities exist which make our attempts at quarantine of but little or no value.

In reference to the recent outbreak of foot and mouth disease in Maine, Prof. R. S. Hindekoper offered the following :

Resolved, That it be the opinion of this Association that the manure on the premises infected with foot and mouth disease in the neighborhood of Portland should be destroyed; that the hay and feed on the infected premises should be burned; that the United States quarantine authorities are, through carelessness and incompetency, responsible for the spread of the infection, and the United States government in a monetary point of view, responsible for the loss to the citizens in the neighborhood of Portland and in the State of Maine; that the roads which have been traversed by infected animals, and the premises used by them, should be properly disinfected.

Dr. Corlies spoke of the danger of using manure from quarantine stations. Dr. McLean further urged the mixing of lime with manure and that it be ploughed under at once. The transmissibility of tuberculosis by eating the flesh of infected animals was admitted by those who took part in this discussion, the principal point discussed being as to when such meat becomes unfit for food.

About twenty-five gentlemen made application for membership in the Association.

After considerable dispute, the selection of the next place of meeting was left to the Comitia Minora.

Dr. Winchester read a report of some cases of actinomykosis in his practice. This led to the expressions of opinion by several present, who acknowledged the existence of this disorder and particularly in the West.

Dr. C. H. Peabody, of Providence, showed the Association an apparatus for heating firing irons, which is a great improvement on anything heretofore used. Practitioners doing a great deal of firing will find it a useful addition. A general discussion followed and was continued until ten o'clock P.M.

CH. B. MICHENER, *Secretary*.

ALUMNI OF THE AMERICAN VETERINARY COLLEGE.

The seventh annual meeting of the American Veterinary College Alumni Association was held in New York, at 11 A.M, Tuesday, March 4th, 1884. President McLean presided. The following members were present: Drs. Miller, Fields, Coates, Hoskins, McLean, Boyd, Critcherson, Kay, Johnson, Michener, Goentner, Kemp, Peabody, Pendry, Austin Peters, Noyes, Dixon and Autenrieth. The minutes of the sixth annual and special meetings were read and approved. Dr. Coates reported for Committee on Alumni Prize, that he had secured as the prizes the following works: Loomis on Theory and Practice, Physical Diagnosis and Wagner on General Pathology, and the same would be presented to the successful candidate of the class of '84, at the commencement exercises. Dr. Coates then, on behalf of the Committee on Portrait of Prof. A. Liantard, reported the completion of their work, and the portrait was brought before the Association, eliciting much applause and admiration. The Committee's report was received and they were discharged with a vote of thanks.

Admission of new members being in order, a motion was made that a committee be appointed to invite them to the meeting, which being adopted, the President appointed Drs. Dixon, Michener and Miller, who, after a recess of five minutes, presented the following members: Drs. Otto, Ryder, White, Vreeland, Helm, Allen, Loblein, Knowles and Vogt. The Secretary was directed to confer with the other members of the class of '84.

The reading of the history of the Alumni Association by Dr. Hoskins was then listened to. At its conclusion a vote of thanks was tendered the writer, after which it was decided to purchase a book, in which it should be recorded and preserved, and that future additions might be made by the Secretaries; that a copy of the same be handed the editor of the AMERICAN VETERINARY REVIEW for publication, and a thousand copies be printed in pamphlet form and circulated among the alumni and friends of the College. This work was entrusted to the Executive Com-

mittee, a charge of ten cents per copy to be levied to defray the expenses.

The original Committee on Portrait, with the addition of Dr. S. K. Johnson, who had rendered valuable assistance in the completion of their work, were directed to present the portrait to the Board of Trustees for the College. Two copies of the portrait having been secured, the Committee decided to present the duplicate copy to Prof. Liantard personally, and for this purpose that gentleman was sent for. On his entrance to the hall Dr. Coates, on behalf of the Association, made the presentation in a few well-chosen remarks as to the esteem and high regard our worthy Dean occupies in the hearts of the graduates of the American Veterinary College. Prof. Liantard responded in a very feeling manner, touching upon the pleasant thoughts this token would ever engender and of the happy hours it would recall, that were spent together as instructor and students. He also accepted this opportunity of speaking to the alumni of the necessity of taking steps toward the securing of a college building, where the opportunities of enlarging the college work would be increased and strengthened.

The election of officers for the ensuing year followed and resulted in the choice, for President, of Dr. R. A. McLean, Brooklyn; for Vice-Presidents, Dr. J. S. Kemp, Jr., of Brooklyn, and Dr. D. J. Dixon, of Hoboken, N. J.; for Secretary, Dr. W. Horace Hoskins, Philadelphia; for Treasurer, Dr. W. J. Coates, New York city; for Librarian, Dr. L. M. Crane, New York city. The President appointed the following members to compose the Executive Committee: Drs. Dixon, Coates, Johnson, Miller, Kemp, Pendry, Zuill and the President and Secretary as members *ex officio*. It was then moved and seconded that the Executive Committee have all power to fill any vacancies protem, occurring during the ensuing year, which was carried.

A motion for adjournment was then carried, when the members repaired to 104 West 47th street, where the alumni dinner was given. About twenty-five sat down around the beautifully arranged table, at the head of which was seated Prof. O. D. Pomeroy, who presided on this occasion in his genial, good way,

which added much enjoyment to the occasion. On this bright occasion the class of '76 was represented by Dr. J. C. Corlies; the class of '77 by Dr. Peabody; of '78 by Dr. S. S. Field; of '79 by Drs. R. A. McLean and W. E. B. Miller; of '80 by Drs. H. B. Boyd and F. P. Roberge; of '81 by Drs. John Dougherty, D. J. Dixon, C. J. Goentner and W. Horace Hoskins; of '82 by Drs. J. F. Autenrieth, J. S. Kemp, Jr.; of the class of '83, Drs. W. H. Arrowsmith, W. C. Brotherton, J. S. Denslow, S. K. Johnson, W. C. B. Noyes, W. H. Pendry and Austin Peters. Several hours were spent in a thoroughly social manner and much good news of the progress of the profession, all over the country, was elicited. All felt that it was good to be there and it is hoped that next year will prove the largest gathering ever had of our Association. After a vote of thanks to Prof. Pomeroy for his attendance the gathering adjourned.

W. HORACE HOSKINS.

Secretary.

NEW YORK STATE VETERINARY SOCIETY.

The annual meeting of the New York State Veterinary Society was held at the Ashland House, New York, Tuesday evening, March 11th, at 8 P.M., the President, Dr. Liantard, in the chair.

The following gentlemen responded to the call of the roll: Drs. James L. Robertson, C. Burden, L. McLean, S. S. Field, H. F. Foote, J. S. Kemp, D. J. Dixon, R. McLean, G. Burget, S. K. Johnson, W. H. Pendry, W. H. Bretherton and J. Denslow. The chair explained why several gentlemen were not able to be present.

Minutes of last meeting read and adopted.

Dr. R. McLean, the essayist of the evening, stated that it was his intention to have read a paper on "Mud Fever," but it occurred to him that the Society ought to take some steps to procure legislative enactments for the protection of the profession. He addressed the meeting in an earnest and able manner at considerable length, and presented a draft of a bill for their consideration.

Dr. L. McLean considered that the essayist ought to have given some idea of the subject that was to engage the attention of the members that evening, so that they could have given the matter some consideration and have been prepared to enter fully into the question.

Dr. Field said it was a question that required well looking into, especially as it had not received the desired favor when last presented at Albany. If the Society thought matters were in a favorable condition, the subject ought to be taken up in an earnest manner.

Most of the members present expressed themselves in favor of some action being taken at once.

Dr. Robertson expressed the opinion that he thought the proposed bill was too long and would have to be condensed.

Dr. Burden said it was about time the profession received some legislative recognition. He thought that there would be no room for opposition to a bill so drafted.

Dr. Pendry contended that had former bills been drawn up in the same broad spirit they would have met a better fate than they had. It was simply following in the footsteps of those who practiced human medicine; they had been obliged to make concessions before being able to get a bill passed for their protection, and it is idle to try and draw a finer line than they had. He considered the bill had been drawn up in a proper spirit, and could not possibly meet with any weighty opposition. The matter could not be laid before the Legislature too soon for their consideration.

Dr. Liantard said the matter wanted to be carefully and fully considered. He, too, considered the draft too long. It would be better to refer it to a committee, to consider and redraft. The session at Albany was drawing to a close, and action would have to be taken at once. He was in favor of a bill, but could not say that he was altogether in favor of the draft presented.

Dr. McLean stated that all members of the profession admitted that legislative action should be taken. There were men in this State, who, although non-professional, we could not ignore; such

members would have to be recognized. He had not expected the draft of bill to be received with such general favor by the meeting. The point he thought that would have to be considered was the length of time necessary to be in practice before being recognized as a member of the profession.

Dr. Liantard, in reply to the question, expressed himself as heartily in favor of the "ten years" clause.

A motion was put and carried, that the draft of proposed bill be referred to a committee of five, for them to report within two weeks, at a mass meeting of verterinary surgeons of the State of New York, to be held at the Cooper Institute, New York city.

The Secretary was instructed to make the necessary arrangements for such meeting.

The Board of Censors reported in favor of Frank Walton, D.V.S, Gemelis Charum, D.V.S., and Thos. Finegan, D.V.S., for membership, who were duly elected.

Application was received from G. A. Parsons, D.V.S., for membership, and the names of Phillip Newman, D.V.S., F. S. Allen, D.V.S., and J. F. Ryder was put in nomination, all of which were referred to the Board of Censors.

Election of officers for the ensuing year resulted as follows: President, Prof. A. F. Liantard; Vice-Presidents, Drs. R. McLean and S. K. Johnson; Secretary and Treasurer, Dr. W. H. Pendry; Board of Censors, Drs. James L. Robertson (chairman), C. Burden, L. McLean, S. S. Field and W. J. Coates.

The question of certificates of membership to be issued by the society, and that of securing a permanent meeting place, was referred to the Board of Censors, to report at the next meeting.

On motion, meeting adjourned.

W. H. PENDRY, D.V.S., *Secretary*.

PENNSYLVANIA STATE VETERINARY ASSOCIATION.

The semi-annual meeting of the Pennsylvania State Veterinary Medical Association was called to order on March 3d, 1884, by the President, Dr. Sallade, who in a few well chosen remarks wel-

comed the members present, hoping that harmony would prevail among us, and that much good would inure to the profession.

On roll call the following members responded ; Drs. McCoart, Hooker, Berry, Sr., Hart, Glass, Girard, Hoskins, Gladfntler, Schaufler, Bridge, T. B. Rayner, G. B. Rayner, Zuill, Reinhart, Sallade, J. B. Rayner, Keil, Kerlor, Blank, Goentner and Collins. The reading of minntes of August meeting followed and were adopted as read.

Applications for membership being in order, Dr. McCoart proposed the names of Drs. Knight, M. W. Birch, Thos. D. Young, William A. Birch, Jas. Marshall, John Berry, Jr. Dr. Hoskins proposed the name of Dr. T. S. Lippincott. Dr. Blank proposed that of Dr. J. W. B. Fretz. Dr. Glass was authorized as Corresponding Secretary to offer the following names: Jos. Oechsle, H. T. George, N. Rectenwald. Dr. Berry, Sr., offered that of Dr. John B. Rayner. Dr. Girard proposed those Drs. Thos. Taylor and George Beldin. The name of Dr. R. Chonn was afterwards presented. At this point Dr. Hooker moved that a recess be taken until 12 o'clock, that the members proposed have an opportunity of appearing before the Board of Censors. Dr. McCoart spoke on the motion in behalf of members of the Philadelphia College of Veterinary Surgery, and of those holding certificates of the Pennsylvania College of Veterinary Surgeons; he thought these men should be admitted at once. Dr. Hoskins replied and claimed that such action would be contrary to the usual methods of admission into professional bodies and to our by-laws. The President then said that further remarks would be out of order, and ruled that all applicants for membership must go before the Board of Censors. Dr. McCoart took exception to the ruling of the chair; this motion was pnt before the honse, and the President was sustained in his ruling, after which the original motion prevailed. The Board of Censors, consisting of Dr. W. Horace Hoskins, Chairman; G. B. Rayner, Chas. Schaufler, W. L. Zuill and J. R. Keeler, then convened, and the following applicants came before them and were admitted: Drs. M. W. Birch, Knight, J. W. B. Fretz, John B. Rayner, Nicholas Rectenwald, H. T. George, P. M. Minster and T. S. Lippincott. The

following were rejected : Drs. Wm. A. Birch, Thos. D. Young, Richard Chonn and Jos. Oechsle.

The meeting was called to order at 1 p. m., and the above report was rendered by the Chairman. Dr. McCoart took exception to the report, and especially to the rejection of Dr. Wm. A. Birch, and in championing his student's cause, he called upon the Chair to have Mr. Birch come before the Association and to allow the Board of Censors to examine him. As his preceptor, he claimed his ability as a teacher, and that his student was able to pass a favorable examination, and followed these remarks with a motion for exceptions to the Board's decision, but it was ruled out of order, the President quoting from the Constitution that the decision of the Board was final, and he so ruled. Dr. McCoart moved that exception be taken to the Chair's ruling, and that the report referring to Mr. Wm. A. Birch be laid upon the table. The motion as to whether the exception should be allowed was placed before the body, and the Chair was sustained. It was then moved and seconded that the report be accepted as read, and carried.

The report of Corresponding Secretary was then heard and approved. The Treasurer's report followed and was accepted.

The reading of essays being in order, Dr. Reinhart responded with an article upon vertigo stomach staggers. The discussion following was indulged in by Dr. Hooker, who objected to the large use of purgatives in such cases; and by Dr. Blank, who referred to a case of superpurgation which followed the administration of 8 drams of aloes, terminating in death. The essayist quoted one case where he gave 60 minims of croton oil. Dr. Knight advocated small doses of aloes and charcoal for a week, then dropping it for a day or so, and continuing again, claiming that it regulated the condition of the digestive organs.

Dr. Glass then brought up the disease now prevalent, which causes a disordered condition of the lower part of the limbs, and gave a synopsis of the trouble. As the causes he referred to the long continued ice and snow, which being followed by a long continued thaw, and the dirt and slush aided by the use of salt on the tracks made a good freezing mixture, which in contact

with the parts affected, decreased their vitality. His treatment: if early and the skin is slightly broken, he poulticed and tried to get suppuration and a good clean wound, and then used an ointment of sublimed sulphur, sugar of lead and vaseline. He referred to some constitutional symptoms in a few cases. Dr. McCoart spoke of its being an old disease, and that in some cases was followed by pyæmia. Remarks on the subject were made by Drs. Zuill, Kooker, Hoskins, Girard and G. B. Rayner.

The committee on framing a bill was then asked to report. The Chairman, Dr. Hoskins, then reported the bill as completed by the committee and signed by five of the member, while the remaining two refused to sign and read letters stating their objections. The bill was taken up section by section, and with the exception of Section 6, was adopted as reported from committee. The committee on motion was accorded a vote of thanks, and on motion discharged. A motion was then offered and carried that the President appoint a committee to present the bill at the next session of our State Legislature, and the following members were appointed as a committee: Drs. George, Zuill, Hoskins, Lippincott, Reinhart and Bridge, and the entire society as a committee to work for its passage.

The propriety of issuing certificates of membership was referred to by the President, which was well received, and to further the prospect, Dr. McCoart suggested that a committee of five be appointed to get up a certificate, have our Association incorporated, and secure a seal for the same. The President appointed on this committee, the President, Dr. Sallade; Recording Secretary, Dr. Gladfelter; and Drs. Hoskins, Zuill and Reinhart. These certificates to be signed by the President, Recording Secretary and Board of Censors.

The following members were appointed to read essays at the next meeting, to be held in Reading, Sept. 2d, 1884: Drs. Jas. McCoart, J. B. Rayner, Bridge, Hart, George, Lippincott and Birch.

After a vote of thanks being tendered the President, the meeting adjourned.

W. HORACE HOSKINS

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held on the evening of March 1st, 1884, President Zuill in the chair. On roll call the following members responded: Drs. Rogers, Zuill, Glass, Goentner, Hoskins, Campbell and Schaufler. Dr. T. F. Hance was present by invitation. The minutes of previous meeting were read and approved. The committee appointed on credentials of Dr. Jas. McCoart as an applicant for membership, reported adversely. The report was received and accepted by the Association.

Dr. S. C. Campbell then favored the Association with an article upon enteritis, making special reference to the apoplectic form. He considered the temperature of 104° to 105° , a good diagnostic symptom from spasmodic colic, where there was no elevation. Quoting from an authority in human medicine, he said the symptoms of colic and peritonitis added, formed those of enteritis. Among other symptoms he referred to the foetid discharges, mouth hot and dry, tongue coated, the skin variable, hot and dry at times, and at other periods moist with perspiration; pulse hard, wiry and quick, about 125 per minute. When the case assumes a favorable nature, it becomes full and soft; when unfavorable, weak and pulseless at the jaw, while the heart still beats; abdomen tender to the touch, and abdominal muscles contracted; animal seldom lies down, if so, with great care, moves around carefully, countenance anxious, paws alternately with the fore-feet; later on delirious, lips become pendulous, breath cold and foetid, eyes dull and amocuratic, legs cold, and death ensues; or a patient may assume a septic condition and become tranquil, eat and drink, when but a few hours elapses before death takes place; in this condition the temperature falls. In favorable cases the pulse becomes full and compressible, and temperature drops down.

Treatment.—Morphia first, with atropia for antispasmodic effects; quinine to reduce the pulse; aconite, veratum viride, if the former fails. Then for the plastic exudations remaining, calomel or iodide of potassium. Locally, counter-irritants, mus-

tard and hot fomentations. He advocated dependence on the hypodermic syringe in congestions of the stomach and bowels, while the symptoms remains aggravated. Dr. Rogers cited a case, seen at 11 P. M., to which had been given laudanum, bicarbonate of soda and aconite. In this case the pain was constant, perspiration on the right side, animal uneasy, walking about, the pulse fast and weak, drawn expression of the face. Exploration of the rectum and bladder showed nothing, but two hours later this was repeated, and in the rectum was found bloody mucus. Sixty grains of morphia were given with no effect; at 12 o'clock noon, he became swollen and was punctured, as intussusception was suspected. After the escape of gas, which allowed a change in the bowels, recovery took place. Dr. Rogers withheld food and allowed the constipation to take care of itself. Dr. Glass then spoke of cases starting as a low form of influenza, in the lower part of the city, and the owners would give oil, ashes, urine, croton oil, etc., to get a passage, after which the surgeon would be called in. Much discussion followed as to whether enteritis followed colic, some contending that it does, others not. In enteritis the recovery must be slow, and this would often exclude many so called cases, that recover in a few hours. It was thought in giving tincture of opium, that the stimulating action of the alcohol would be objectionable. Ipecac was recommended in inaction.

Impressions upon animals during coition was again brought up by Dr. Hoskins; citing a brown bay mare and dark bay stallion, with a chestnut colt following with white face, four white legs, and frost marks along the back at adult age. In this instance while in the act of copulation and twitched, a sorrel horse with four white legs and white face lay in the meadow below, in sight of the mare, and it being early in the spring, frost had formed along her back. As far back on either side as they could go, not a sorrel progeny had been produced. Another instance was of a mare, who on being brought to the stallion, was very ugly and was strongly twitched, and the colt had the upper lip drawn to one side. Dr. Glass then read an authority on such subjects, of U. S. marks being present on the young of animals that had been marked in the army.

Dr. Miller was appointed essayist for the next meeting, after which adjournment followed.

W. HORACE HOSKINS,
Secretary.

MICHIGAN STATE VETERINARY MEDICAL ASSOCIATION.

The Michigan State Veterinary Medical Association held its annual meeting at the parlors of the Everet House, on Feb. 5th.

The meeting was called to order at 3:45 by Dr. J. Hawkins, of Detroit, President of the Association.

Recording Secretary A. J. Chandler called the roll, the following members answering to their names: Prof. A. E. E. Grange, of the Michigan Agricultural College, at Lansing; Drs. J. A. Dell, Ann Arbor; A. J. Chandler, Detroit; J. W. Ferguson, Bay City; D. G. Sutherland, East Saginaw; E. W. Bartram, Paw Paw; B. C. McBeth, Battle Creek; S. Brenton, Jackson; J. Hawkins, Detroit.

The minutes of the previous meeting were read and approved.

The Association then proceeded to the election of officers for the ensuing year, with the following result:

President, Dr. D. G. Sutherland, East Saginaw; First Vice President, Dr. A. J. Murray, Detroit; Second Vice President, Dr. J. W. Ferguson, Bay City; Third Vice President, Dr. E. W. Bartram, Paw Paw; Recording Secretary, A. J. Chandler, Detroit; Corresponding Secretary, Dr. J. A. Dell, Ann Arbor; Treasurer, Dr. S. Brenton, Jackson; Board of Censors, Prof. A. E. E. Grange, Lansing; Dr. C. W. Stowe, Detroit, and Dr. J. Hawkins, Detroit.

The names of Dr. David Burt, of Flint; Dr. Paul Paquer, of Jackson; Dr. O. L. Fick, of Lapeer, and Dr. James Taylor were proposed for members of the Association.

Drs. Burt and Paquer were unanimously elected members of the Association, while the applications of Drs. Fick and Taylor were carried over until the next meeting.

A communication was received of Dr. A. Liautard, editor of the AMERICAN VETERINARY REVIEW, expressing a willingness to

publish a report of the proceedings of the meeting in that journal.

On motion, the Corresponding Secretary was instructed to prepare a report for publication in said journal, and also a report for publication in the *Journal of Comparative Medicine and Surgery*.

Letters were read from Drs. Murry and Jennings, of Detroit, expressing their regret at being unable to attend the meeting.

The Treasurer submitted a report of receipts and disbursements, showing a balance of \$25 on hand.

Bills amounting to \$4.65 were presented and allowed.

Prof. Grange made a statement to the Association, that in December last a meeting was held at Chicago, called by the Commissioner of Agriculture to take into consideration the stock interest of the country. He had the honor of being one of the delegates to represent Michigan at that meeting. The meeting was held for the purpose of taking action in the interest of stock men, and more particularly for the purpose of devising some means to exterminate, if possible, the contagious diseases among stock. With this end in view, it was decided to introduce a bill in Congress devising measures for the suppression of these diseases. A committee had been appointed to go to Washington to work for the interest of the bill. Mr. William Ball had been appointed a member of that committee from Michigan. The Professor stated that several of the associations of this State had voted money for the purpose of defraying Mr. Ball's expenses while at Washington, and he suggested that this Association take similar action.

Several members of the Association made remarks favoring this action.

Prof. Grange moved that the Veterinary Medical Association of Michigan contribute the sum of \$25 towards paying the expenses of Mr. William Ball, as a delegate from Michigan to Washington, for the purpose of using his influence with Congress for the passage of a bill for stamping out contagious diseases among domestic animals in the United States. Carried.

On motion, the Corresponding Secretary was instructed to

write Mr. I. H. Butterfield, Jr., at Port Huron, informing him of the above action.

Dr. Sutherland moved that each member of the Association write to the Congressman representing his district, asking him to use his influence for the passage of the proposed bill.

After some discussion this motion was adopted.

The Corresponding Secretary was instructed to notify the members of the Association not present at this meeting of the adoption of the above motion.

Dr. Hawkins, the President, made an explanation of his failure to call a meeting or appoint delegates to the National Veterinary Convention, held at Chicago in December last. He said that, under the constitution, he had no right to take such action. He stated that he had been censured for his action, and he desired to have the matter adjusted in some manner by which he could be relieved of blame which, he thought, should not be cast upon him.

After considerable discussion, a motion was made and carried to the effect that Dr. Hawkins had no authority, under the constitution, to call a special meeting or appoint delegates to the National Convention at Chicago, December 12.

The Association then discussed the question of appointing delegates to one or the other of the National Associations, the National or the United States, and it was finally decided to send no delegates to either Association, but to watch their proceedings and then decide which Association they desired to be represented in.

On motion, the Association adjourned until evening.

Upon re-assembling in the evening Dr. J. A. Dell, of Ann Arbor, read a paper on "Tuberculosis." He gave a full and exhaustive description of that dreadful disease of cattle, which he claimed was closely akin to glanders in horses, and described it as, under certain circumstances and conditions, extremely fatal and contagious, being diffused all over the entire country from the Atlantic to the Pacific. He gave the results of his own experience in treating the disease, from which

he adduced the belief that the disease was contagious, at least in this country. He said that it seemed to be most common among fashionably bred cattle, the half bred and the grades, especially the latter, seeming to defy its ravages. He discussed the subject of treatment, claiming that there was no cure for it, but that gratifying results were often obtained from a palliative treatment, with a view of fitting the infected bovines for market, to enable the owner to reap some benefit. In regard to the question of danger to the human family of being infected with the disease from partaking of the meat of these animals, he thought there was no danger if the meat was well cooked, which, in his opinion, should be the case with all meats. In regard to using the milk from infected animals he thought this should not be allowed, until human practitioners had experimented in this direction and made known the results of their researches. The paper was well written and listened to with marked attention.

After a genial discussion of the paper, the Association adjourned to meet on Wednesday of State Fair week in the city where the State Fair is held.

MASSACHUSETTS STATE VETERINARY ASSOCIATION.

At a meeting held at Young's Hotel, March 18, 1884, of veterinary surgeons practicing in Massachusetts, it was voted to organize a State society. There were fifteen gentlemen present. F. H. Osgood, M.R.C.V.S., was chosen President and M. Bunker, D.V.S., of Newton, Secretary.

It was voted that the charter members shall be composed of graduates of regular veterinary schools, and that such gentlemen shall exhibit their diplomas to a committee hereafter to be appointed, by acclamation, for acceptance.

The following gentlemen were chosen the committee: J. S. Saunders, L. H. Howard, W. Bryden, F. S. Billings, C. P. Lyman of Boston. The meeting adjourned to gather at the call of the President.

NEWS AND SUNDRIES.

AZOTURIA IN OHIO.—Azoturia is very prevalent in this section. Most of the cases met with have been of a mild form and respond quickly to treatment, if taken early.

BACILLUS OF RINDERPEST.—Dr. Metzdorf, of Breslau, is said to have discovered and cultivated the bacillus of rinderpest.

CATTLE DISEASE.—Cattle near Lasalle, Ills., are suffering from a strange intestinal complaint which proves fatal.—*Am. Cultivator*.

HOG CHOLERA.—Hog cholera is prevalent in the western portion of Iowa, and a recurrence of the 1877 enzootic is feared.—*Am. Cultivator*.

SPONTANEOUS COW-POX.—A case of spontaneous cow-pox is reported to have occurred in the Department of the Gironde, France. The lymph has been collected and inoculated.

STAMPING OUT PLEURO-PNEUMONIA.—A bill has passed the State Assembly appropriating \$50,000 for the enforcement of the act designed to stamp out pleuro-pneumonia and other contagious diseases among the cattle in this State.—*Med. Record*.

AN INFANT THAT SECRETES MILK.—Dr. Lesnewich reports, in the *Paris Medical*, the case of a male infant, aged ten months, that secretes milk in considerable amount. The infant has, for its size, well developed mammary glands.—*Med. Record*.

GLANDERS IN ILLINOIS.—Glanders has been discovered among the horses of an extensive stable in Chicago. The State Veterinarian has shot two of the victims and instituted strict quarantine regulations. It is not known how many horses may have contracted the disease.—*Prairie Farmer*.

SHIPMENT OF SHEEP STOPPED.—The shipment of Merino sheep from Vermont to Australia has been temporarily stopped by the closing of all Australian ports to American sheep. A

shipment of 100 which has just reached San Francisco can go no farther on account of this law. No reason for the prohibition has yet been given.—*Country Gentleman*.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Quarterly Journal of Veterinary Science in India, Veterinarian, Veterinary Journal, Clinica Veterinaria, Recueil de Medicine Veterinaire, Presse Veterinaire, Archives Veterinaires, Annales de Belgique, Revue fur Thierheilkunde und Thierzucht, Revue d'Hygiene, Revue Scientifique, Gazette Medicale, Giornale di Anatomie, Fisiologie and Pathologie degli Animalì.

HOME.—Medical Journal, New York Medical Journal, Turf, Field and Farm, Wilkes' Spirit of the Times, Breeders' Gazette, Country Gentleman, American Agriculturist, Live Stock Journal, Scientific American, Druggist Circular.

JOURNALS.—Farmers' Review, Chicago Times, Nebraska Herald, Journal of Agriculture, Kansas City Times, Topeka Sunday Capital, Portland Press, &c., &c.

BOOKS AND PAMPHLETS.—Horses, their Feed and their Feet. Encyklopadie der Gesammten, Thierheilkunde und Thierzucht,.

COMMUNICATIONS.—W. H. Pendry, T. Winchester, G. H. Bailey, A. A. Holcombe, H. W. Hoskins, M. Bunker, J. P. Klench, R. Kay, W. R. Howe, C. B. Michener, J. D. Hopkins.

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As we go to press on the 20th of the month, papers for publication ought to reach us before or on that date.

AMERICAN VETERINARY REVIEW,

MAY, 1884.

ORIGINAL ARTICLES.

THE OUTBREAK IN KANSAS.

REPORT OF G. C. FAVILLE, D.V.M.

(*From the Northwestern Live Stock Journal.*)

To His Excellency James B. Grant, Governor of Colorado :

SIR—Having been appointed by you as a member of the committee to investigate the disease that exists among the cattle at Neosho Falls, Woodson County, Kansas, and in other places in that State, I would report the following as the result of such investigation :

In company with J. W. Snyder, of Cheyenne, Wyo., and Mr. F. P. Ernest, of Deer Trail, Colo., we visited the herd of Mr. Daniel Keith, of Neosho Falls, on March 20th, and found his cattle with the following symptoms and history : Mr. Keith had at first a herd of 116 cattle. Of these three were cows, seventy were yearlings and calves, and the rest were two-year-olds. Of these seventy head of yearlings, sixty-three head had been bought December 10th and delivered the next day. These were gathered in a radius of ten miles in a district south of Neosho Falls. Of the rest eight head were bought of Alexander Linn, one mile south of the Falls, and about December 5th he bought five head of Nelson Stride, two miles south of his place, and about December 17th one from William Inge, two and a half miles southeast from the Falls.

The history of the disease as it appeared in this herd is as follows, as nearly as could be ascertained: About December 23d or 24th he noticed a number of calves (yearlings) standing humped up, head drooping, and jerking up the hind feet as if sore or benumbed. They would walk around if driven, but would soon lie down if left alone. In two or three days after they were inclined to lie down all the time. He found around the top of the hoof and in the digital space a red swollen condition, very tender and the claws spread. Then the swelling extended higher up, as far as the fetlock joint. The walls of the foot began to separate and come off. He did not examine any of their mouths, and so far as he knew they were eating right along. They were taken sick two or three days from the time the first one was taken sick until, about January 1st, he had from twenty to thirty sick ones. For convenience of description we will adopt the plan of the physicians who preceded us and divide the cattle into two lots.

Lot No. 1.—The first animal died about January 5th. It was the best one in the herd. The symptoms were as follows: The animal stopped eating grain, but ate hay, seemed very stiff, frothed at the mouth, and appeared in great agony. On March 8th another one died. This one had been suffering for about ten weeks, and had lost both hind feet. Three had been killed. These calves had been fed on shelled corn, hay and oat straw before he got them. After he had got them he fed them on shelled corn and mowed oats and hay. Six calves were taken sick within three days after he got them.

Lot No. 2.—November 1st he bought forty head of two-year-steers and placed them in a timber pasture adjoining the other cattle. They were fed upon hay with grain. The first sign of disease among this lot appeared February 28th. About ten were sick, with the same symptoms as the rest. On March 13th he separated them.

He found there were then 118 head upon the place. Some had died and he had bought others, and some of the cows had calves. Of these 118 head seventy-four were more or less affected. Two of them will lose all four feet, nine have one foot off, four

have two feet off, one four-year-old cow loses both hind feet and one front claw, three were with one foot affected, six were affected in two feet, and one in three feet, all of which will lose one or more of their toes. There were more or less mouth symptoms in all of these cases, but they were more of the character of simple abrasions than of ulcerations, and did not show in these cases as plainly as in the herd of Mr. Hindman.

Dr. Trumbower says that on March 9th, he discovered a red yearling steer. It had a hot mouth, with the membranes very much reddened and flushed. He discovered three blisters, one of which was the size of a dime, in the roof of the mouth, and two smaller ones on the tongue. Temperature 104.4° Fahrenheit. He was lying down when found; no swelling of the feet, but much stiffened. Next day he was lying in the same place, with the blisters ruptured. He has since nearly recovered.

Mr. Beard's hired man says that he came to work on the place February 16th. The next morning he noticed an old cow to be lame. On February 18th a cow from Keith's farm was brought on the place. This last named cow was taken sick on or about February 22d. March 1st the third one was taken sick. This is a large two-year-old roan steer. On March 1st or 2d the fourth animal was noticed to be sick—slobbering—and Mr. Beard states that he examined her mouth and found her tongue red and covered with little pimples. She died at 10 A. M. of the next day. The fifth case on Beard's place was slightly lame on March 11th, but was recovering.

The highest temperature among the sick ones was 102.8° Fahrenheit. These cattle were fed on corn, corn fodder and wild hay, and drank from the Neosho river.

Mr. Hindman lives five miles north of Neosho Falls, and has resided for eight years upon the place. He says he has not bought any cattle for eighteen months, and they are all natives. March 10th he had ninety-six head of cows, calves, yearlings and two-year-olds. These cattle had only been upon the road once, and that during New Year's week, when they were driven to a stalk field, distant one-quarter of a mile. Mr. Hindman's farm is just across the road from Mr. Keith's, and Keith's cattle had

been upon the road previous to this time. On or about January 10th a milch cow which had never been upon the road was taken sick—found lame as the others had been, and is so now. She was kept in a lot where all the other cattle came to water. The first animal taken sick after this was on February 14th or 15th, the morning following a heavy sleet; then about seventeen head were taken lame, and since then there have been new cases daily. On March 14th there were sixty-five affected. March 19th the cases here were as follows:

Eighteen head with two hind feet off.

Five head with one hind foot off.

One animal with three feet off—both hind feet and one front foot.

One with all the feet off.

The rest of the sixty-five head were lame in the hind foot or feet.

Dr. Trumbower visited some reported cases at Hall's Summit, Coffey County. He found two cows belonging to George R. Smith, one with the outer half of the left front foot coming off at the joint within the hoof. Left hind leg coming off between the hoof and fetlock, and the right hind leg broken off at the same place, and carrying the bones of the metatarsal region with it. Mouth symptoms slightly marked. About January 1st this cow became tangled in a rope and was cast, but did not get lame until February 1st. She calved February 29th, mouth some sore and her appetite not of the best. March 17th the cow was as described; calf well, but small. Hall's Summit is twenty miles from Neosho Falls.

Christian Pribbernow, living on Owl Creek, ten miles southwest of Neosho Falls, has 183 head of cattle, of which sixteen are affected. There are fifty-four yearlings, twenty-four two-year-olds, fifteen three-year-olds, and the balance were cows and calves. The disease broke out February 15th, mostly among the older cattle. The smaller ones had been put in a separate pen and fed on millet, oats and corn fodder. The others were fed largely on wild hay. Six of this herd have very bad feet. Two of them lose the whole of the digital bones.

On the farm of Mr. Henry McCrary, living twenty-five miles north of Russell, in Osborn County, Kansas, we found twenty-five cattle that were showing the disease, with identical symptoms. The first case appeared February 11th, but there is great doubt regarding the symptoms of this case. The rest there can be no doubt upon.

These are the herds (with the exception of the one at Hill's Summit) that we visited. The disease had been reported to be contagious aptha, or foot and mouth disease. The symptoms of foot and mouth disease may be briefly tabulated as follows:

First—Rise in temperature to 103° to 107° .

Second—Loss of appetite; hair standing wrong.

Third—Hot, clammy mouth; saliva hanging in ropy strings from the mouth, and eyes running.

Fourth—Blisters upon the tongue, and on the lips and between the toes.

Fifth—Blisters rupture, leaving bad, ulcerated sores, which readily head in the majority of cases. Some authors say that in badly neglected cases the hoofs may separate from the foot and drop off. Ulcers may break out upon the bag and in rectum or vagina, and the disease is reported by all authorities to be not only highly contagious among cattle, but hogs, dogs, chickens and even men will take the disease. And the disease is stated by all authorities to have a period of incubation of from one to eight days at the longest.

Now the condition of things we find is not the same as that given for contagious aptha. Here we have diseased cattle running with other cattle for weeks and months, and not communicating the disease. We have some mouth sores, but none that are of any more importance or any more severe than those we found in healthy steers among healthy cattle. Calves upon the Hindman place have been turned, as fast as taken sick, in with the herd of twenty finely fed calves, and none of them have become infected. Pigs in all the places have had free access to the cattle pens, and in some cases that were killed drank the blood and ate portions of the carcasses. Dogs completely devoured the carcasses of the cows that died in Osborn County, and none of

them have been in the least sick. So there can be no evidence of the disease being contagious, except the fact of a large number of cases breaking out on different farms as well as upon the same farm so nearly at the same time. There is not the slightest evidence to show that this disease was carried from one of these farms to the other. There is no evidence, that I have been able to find, to show that the disease was carried into Osborn County, for no cattle have been taken into that county since June 6th, last. There is no evidence to show that the disease was carried from Keith's farm to Beard's, for the Keith cow was not the first cow sick. This, with all other things taken into consideration, causes me to say most positively it is not the foot and mouth disease, nor any other contagious disease. We find in all the farms, without exception, the whole of the hay is cut from wild meadow, growing on bottom land; that this hay is largely made up of wild rye and allied grasses, and that this rye is badly infested with ergot. In short, so much so, that in many heads of grass every seed shows the ergot spur. The well-known effect of ergot upon animals as well as man, when being continued, and in not overdoses, is to produce dry gangrene of the extremities, or the parts farthest from the centre of circulation. I have seen this same disease in Storey County, Iowa, in connection with Dr. M. Stalker, Professor of Veterinary Science in the Iowa Agricultural College in 1879, and at that time we pronounced it ergotism, and subsequent facts confirmed our diagnosis. Since that time, Prof. Stalker has had similar cases each year.

The same trouble broke out not long since, in Hon. J. P. Maxwell's herd at Boulder. At Neosho Falls we met with Dr. D. E. Salmon, of the Department of Agriculture, at Washington; also Dr. M. Stalker of Iowa, and Dr. M. R. Trumbower, of Sterling, Illinois, and this diagnosis of the case is fully confirmed by these gentlemen. When sustained by such eminent counsel, it is not possible that I should have erred in my diagnosis.

In conclusion then, I would say, there is no danger of the disease spreading. It is quite as liable to attack cattle that are fed upon "wild rye" in Colorado as Kansas, because this grass is grown under conditions favorable to the growth of ergot.

FOUL IN THE FOOT.

(Extract from the Report of State Veterinarian, J. J. HOPKINS, D.V.S.)

Foot and mouth disease is a highly contagious and infectious febrile disease, associated with a vesicular eruption in the month, between the pedal digits and around the coronets. In some cases the mouth only is affected: in others the feet may be the seat of the eruption, the membranes of the month remaining free.

Cattle, sheep, goats and pigs are affected by the contagion in the order named, and instances are on record in which horses, dogs and poultry have been infected.

On February 2d, 1884, the steamship Ontario, from England, arrived at Portland, Maine, and landed twenty-eight Hereford cattle suffering with foot and mouth disease. By negligence on the part of those in charge the disease spread to the surrounding country before its character was recognized.

At latest accounts the authorities had the matter in hand, and all known infected places and sick cattle were quarantined. Still new centers of contagion were being developed, and grave fears are entertained as to the result.

FOOT AND MOUTH DISEASE

was reported among the cattle near Neosho Falls, Kansas, last month, producing the greatest excitement among people interested in agriculture and stock-growing. That State was utterly unprepared for such an emergency, as they had no sanitary laws in force, and no funds provided with which to indemnify owners or investigate and control the spread of contagion.

The urgent necessity of prompt action induced Governor Glick to call a special session of the Legislature to enact such laws as were necessary to stamp out this or any future invasion of contagious disease. Many veterinarians and gentlemen experienced in handling cattle visited the infected farms, and soon the theory of contagious foot and mouth disease was disproved.

A LOOK INTO KANSAS.

I was provided, through the kindness of Hon. Thomas Sturgis,

with a letter of introduction to Governor Glick, of Kansas, and I was afforded every facility for a thorough examination of the cause and symptoms of the disease among the cattle. I visited many farms near Neosho Falls, and found that the cattle are fed on wild prairie hay, corn-fodder and straw; in some places hard, flinty corn, on the ear, was added to their rations, care being taken to have pigs run in the same lot to utilize the corn in the droppings of these animals.

A SUGGESTION AS TO CAUSES OF DISEASE.

It is a grave mistake to feed young cattle with a food that they are unable to masticate or digest. The corn is softened by maceration and absorption of the different gastric juices in the intestinal tract and passes from their bodies in good condition for easy digestion by the pig—fattening pigs at the expense of the calf! So the corn, instead of nourishing the calf, actually robs the already impoverished creature, which has to consume great quantities of coarse fodder to get a small amount of nutrition.

Is it any wonder that such a creature should be unable to withstand the hardships of a severe winter without shelter except on some favored (?) farms which possess a timber lot; and old residents say that the past winter was the most severe during the last ten years. Where a great number of animals are fed in the same manner, and exposed to the same hardships, they are of necessity liable to the same disease, and when any extraordinary hardship is imposed on them, the weakest succumb. Again, in some cases we find that some animals have a predisposition to disease from their birth, a weak constitution, that if nursed and pampered in youth, might reach adult age with medium strength.

You can now appreciate why so many of the young stock on the Kansas farms developed disease due to innutritious food and exposure to an exceedingly hard winter. The disease in Kansas is "foul in the foot," commonly called foot rot, and it is a common disease in all countries where like conditions exist.

A number of scientific gentlemen investigating the cause of this disease, discovered in the hay some wild spurred rye, and concluded that the malady was due to ergot poison.

SERIOUS SUGGESTIONS.

If this disease is due to ergot poison, why then is this the first outbreak, since the Kansas farmers have fed this same kind of hay to their cattle from the first settlement of the State? Again, on Mr. Goodrich's farm, where the disease prevails, the lands are improved by cultivation, and there is *no ergotized rye* in this hay. Yet, out of ninety-six cattle, forty head of young stock are reported affected with the disease. Then, stranger to say, Mr. Beard has fed seventy-five head of cattle all winter on hay that is full of ergot, of which I present you a sample taken from his feed-rack, and only three heifers and one old cow are affected. Stranger still for the ergot theory, Mr. Pribbenow fed one hundred and ninety-five cattle on millet hay and corn-fodder, and he has fourteen of his young stock affected.

Another puzzle is presented by Mr. Keith buying sixty-three head of young stock from Mr. Davis, on the 15th of December, and on the 23d nearly all were down with disease. Keith's hay contains ergotized rye. Davis has had no sickness in his herd. I took the opportunity to visit nearly all the farms adjoining those having sick cattle, and found that more or less ergotized rye can be found in the hay, and yet they had no sick or lame cattle.

The experiments of Dr. Samuel Wright, recorded in Finlay Dun's *Veterinary Medicines*, show the effect of ergot on the lower animals.

When given in large doses, the effect is to produce nausea, impaired appetite, weak, irregular pulse, diarrhœa, excessive fetor of secretions and excretions, paralysis of the hinder extremities, enlargement of the liver, contraction of the spleen, impairment of the senses, wasting and general debility.

It does not, however, as in man, cause gangrene in the extremities.

None of these symptoms were found among the sick cattle of Keitz.—*From the Democratic Leader, Cheyenne, Wyo. T.*

CASTRATION OF THE STALLION AND CRYPTORCHIDE, WITH AND WITHOUT RESTRAINT.

BY G. BAILEY, D.V.S.

(Continued from page 13.)

Castration by *ligature* is now but very little practiced, although the operation is so well adapted for man that no other is ever employed in any malignant disease affecting the testicle, or hypertrophy, when from its size it becomes a burden and annoyance.

The most crude and commonplace employment of ligature is to encompass the entire cord, and its envelopes, with a "waxed string," and then detach the testicle with the knife. The sequel often proves, however, that the ligature has not been drawn tight enough to slough off that portion below the string, which leaves a nucleus for a fungous enlargement at the lower extremity of the cord, known as *champignon*, and sometimes extending as high up or even beyond the abdominal ring, when it takes the name of *scirrhus* of the cord. In every instance where I have yet been called upon to operate for *champignon*, and could trace the method employed in the castration of the animal, it has proved to be by ligature.

A much more scientific use of the ligature, if it is to be employed at all, would be to divide the *vas deferens*, and then expose the artery, which will be found pursuing its tortuous course along the posterior portion of the cord, the artery alone to be securely tied with silk, or, better still, with catgut ligature; and while ligature of the artery would seem to be the most surgical and humane, experience has proved that it is one of the most unsuccessful of all methods. The late Professor Dick recommended the ligature for a number of years; but towards the end of his life he was forced to acknowledge, and frankly did so, that it was attended with frequent fatal results, the very presence of the ligature seemingly inducing a prejudicial effect, irritating the cord and causing peritonitis or abscesses. *Torsion* is held in high esteem by many eminent practitioners as the most reliable and humane, the cord quickly giving way under the slow and steady

turning of the forceps, the spermatic artery alone remaining unbroken till it is drawn out as small as a piece of thread. The operation does not appear to be a painful one, nor to be succeeded, when rupture ensues, by any alarming hemorrhage. *Scraping* the cord is practiced to a limited extent in the East, but in the West it is a very common mode of castration upon the plains, where droves of young horses are caught and submitted to this process, and immediately allowed their liberty, being given no after care or confinement. The operation is simple and apparently safe. After the testicle is exposed, the vascular cord is scraped with a rough-edged knife until it is divided, or a thimble with a flat edge is sometimes employed for the same purpose. Another mode is to spread out the cord, thus elevating the artery, and divide all below with the scalpel, leaving nothing but the artery, which is then safely divided by the same process.

At the first meeting and organization of the United States Veterinary Medical Association, Dr. R. Jennings exhibited the *ecraseur*, for castrating horses, a French invention introduced by him for that purpose into the United States in 1852, but not then favorably received by stock owners. He explained its advantages and working, but it was not at that time appreciated by members of the convention. Since that time the instrument has come into much more general use, and is the only instrument, with the exception of the "House clamp," employed in castration without restraint, by such bold and skilful operators as Miles, Miller, and the late C. D. House, of New York, the latter one of the most ingenious and practical men who ever made a specialty of equine dentistry and castration.

The *ecraseur* is now largely used by the regular profession, and with almost uniformly good results where its principles are correctly understood and properly applied. These I believe to consist of slowly and steadily turning the instrument, by which the internal membrane of the artery is broken and forms a cul-de-sac, containing the clot, to which it afterwards adheres through the effusion of plastic lymph. If this precaution is taken, I believe it to be a safe and humane mode of operating, although I have often seen profuse hemorrhage ensue from the rapid and

careless use of the instrument in the hands of unskilful men.

I now come to consider the merits of the "House clamp," so called from the name of its inventor, an instrument which I have successfully employed with uniformly good results in my practice, never having yet seen a single unfavorable termination from its use. I have come to believe the employment of this instrument to be much safer than the ecraseur, in that the firm and uniform crushing of the cord, *below the clot*, serves as a guard and insurance against hemorrhage which renders such a result almost if not quite impossible, while the slight amount of pain and irritation endured by the patient after the division of the non-vascular portion of the cord, is always an assurance that no undue amount of inflammation has been induced, calculated to retard the healing process which has been excited by the operation; and while I have never known of a case of hemorrhage, primary or secondary, resulting from its use, I have been called several times to attend cases of excessive hemorrhage where the ecraseur had been unskilfully employed. I need only to refer to the complications arising from castration, immediate and remote, such as hernia, hemorrhage, champignon or scirrhus cord, peritonitis, enteritis, gangrene, tetanus, amaurosis, and rarely, glanders and farcy, as these are well understood by the profession, only to say that their avoidance can best be promoted and insured by the most humane and painless mode of operating, and these I believe to be embodied in the use of the "House clamp."

I come now to what I consider a very important auxiliary to castration proper, being no less than the removal of the non-apparent testicle from the *cryptorchide*, or ridgling horse. Until a safe and expeditious method of operating upon cryptorchides had been discovered, the veterinary profession were "groping in the dark" in their endeavors to relieve solipeds of an incumbrance that not many years ago was thought to be impracticable, if not impossible. The advantages of such an operation, if its entire safety could be practically demonstrated, were self-evident to any one who ever had any experience with a ridgling horse; for I think I hazard nothing in saying they are the most unsafe and ungovernable brutes of the equine genus. Now that the

noted specialist, Farmer Miles, has discovered a safe and humane method of operating upon ridglings, and has publicly demonstrated its entire success, not only throughout this country, but also England, Ireland and Scotland, I believe the veterinary profession cannot do less than to acknowledge their indebtedness to an ingenious and skilful man for a valuable contribution to veterinary surgery; a contribution that prompted Mr. George Fleming, in the London *Veterinarian*, to make the graceful and frank avowal, "that it had remained for an 'American farmer' to visit England and publicly demonstrate to British veterinary surgeons, what they had never dreamed of being successfully accomplished, the safe and scientific removal of the non-apparent testicle of cryptorchides."

If I were asked to give a definition of the cryptorchide or ridgling horse, I should say it was an animal with one or both testicles *retained and concealed within the abdominal cavity* ("Ectopiæ of the testicles" is the designation given them by Chauveau), and within the limits of such a definition I do not include the testicles that may be retained in the *constricted portions* of the *tunica vaginalis*, or that remain in any position *external* to the abdominal wall. To constitute a ridgling, the internal abdominal ring must be closed, "hermetically sealed," or, as Miles tersely expressed it, "the door is locked and the key is lost." Having under his instruction for some time successfully employed his method of operating upon ridglings, I can fully appreciate the delicate and patient manipulation necessary to accomplish a safe and certain passage through the abdominal wall, that enables us to possess ourselves of the coveted and hidden gland; and while I am not at liberty to describe the *modus operandi* of Miles, I believe I am "telling no tales out of school" by undeceiving the profession in the opinion I find they generally entertain, that the testicles can be safely removed through the inguinal passage. In company with one of our graduates, Dr. S. S. Field, I sometime since met with a Mr. Adams, of New York State, who claimed to be able to successfully operate upon ridgling horses through the inguinal passage, his mode of operating being to manipulate the testicle towards the "internal inguinal ring" with his right hand

and arm by the rectum, while with his left he introduced a spoon forceps (he had invented) through the inguinal passage, grasping the gland and safely removing it. Now, I undertake to say, if he, or any other man, ever removed any testicle that *had not descended into the scrotum*, with spoon forceps, or any other method, from or through the inguinal passage, that testicle was all the time *external* to the abdominal wall, and *never within it*; and if that method could be forced or employed, the great liability to hernia would be the first thing that should suggest itself to any intelligent practitioner. We all know that in the fœtus the testicle floats in the abdominal cavity, being suspended by a peritoneal fold, at the anterior border of which are enclosed the spermatic vessels. To the posterior extremity of the testicle is attached a thick, round funicle, called the pilot, or *gubernaculum testis*, and when all normal conditions are fulfilled, the progress of development in the fœtus pushes the testicle towards the inguinal region, the gubernaculum acting as a guide, and descending into the inguinal opening, draws the testicle after it, and in this way contributes its share in the formation and construction of the 'vaginal pouch' in which the testicle is afterward contained. But in the ridgling, the internal abdominal ring being closed, the pilot is powerless to perform its mission; the inguinal sac, or *tunica vaginalis*, is never formed, and the *testicle still floats* in the *abdominal cavity*, although in an undersized and undeveloped condition as compared with the normal and matured gland. The function of the testicle being to secrete the spermatic or seminal fluid, which contains the spermatozoa, this function is held in abeyance in the undeveloped testicles of cryptorchides, and if both glands were contained within the abdominal cavity, he would be as impotent as the mule, or other hybrid animal, whose spermatic fluid contains no spermatozoa; and in the only instance in which I have ever had an opportunity to dissect a ridgling (who had died from the effects of an injury), I found the vesiculæ-seminales, on both sides, in an atrophied and unoccupied condition, that afforded ample evidence their mission had never been performed. Believing it to be in the power of every one of us to benefit our profession, by the contribution of such facts

and observations as we have found to be both practical and successful, I have endeavored to collect and submit such suggestions at this time as I trust will be kindly received, if not adopted and approved, and to point out that which has been based on science and confirmed by experience, in contrast with crude theory and superstitious empiricism.

CONTAGIOUS DISEASES OF ANIMALS IN THE UNITED STATES.

A Paper read at the Chicago Convention by Prof. J. LAW, F.R.C.V.S., of Cornell University.

(Continued from page 8.)

The Lung Plague in America the Lung Plague in the Old World.

But we are reminded that there are in our midst stockmen who deny the existence of the genuine European lung plague in America, and who quote anonymous veterinarians in support of their assertion.

I am in no wise disconcerted by this. In company with other sanitarians I had to meet the same assertions a quarter of a century ago, and the tactics now adopted are the same as were followed then.

Then as now, the agitation was ascribed to the cupidity of the agitators. Then, as now, the cattle dealers declared the lung plague a myth, and quoted the late Professor Dick to the effect that it was simply an inflammation of the lungs caused by impure air. The same Professor denied the inoculability of hydrophobia, described rinderpest as a mere impaction of the manifolds and wrote an article to prove the non-contagious character of epidemic diseases in general. We all know that personal interest and the love of notoriety will lead certain men to promulge certain dogmas that outrage the intelligence and common sense of the age. There are still, I believe, at Cambridge, some learned men who assert that the earth is flat and that the sun revolves around it once in twenty-four hours.

A loss of 500,000,000 from lung plague alone has taught England that she is not dealing with a myth, but with a terrible

and exacting reality, and a long and intimate acquaintance with the lung plague has enabled England to pronounce without hesitation on the existence of the same disease in cattle exported from our shores.

To come back to our own case, our self-appointed judges should have gone to the east and given some attention to the facts of the case before rendering their decision and visiting us with wholesale condemnation. They should have stood with us in the yards of the Blissville distillery in 1879, when the veterinarians who had been hired by Messrs. Gaff, Fleishmann & Co., and who had denounced us in the public newspapers, and published a certificate that there was not a case of lung plague in the distillery stables, were invited to select from the cattle we had condemned those that they considered sound, and were furnished in every case on dissection, with the evidence in the lung extensively and most characteristically diseased. They should have stood with us in the field of J. E. White, of Saggs, Suffolk Co., N. Y., where nine cattle, infected by a bull calf from Brooklyn, stood ready to be shot. They should have seen the darkening faces of scores of the inhabitants, and heard the denunciations and the warnings that we would be held responsible for what they considered a grave error and a high-handed outrage on property. They should have seen the urging necessary to get the executioner to do his duty and they should have seen the restoration of universal confidence and support when the chests were opened and the masses of loathsome and characteristic disease exposed. They should have accompanied us in the rest of our inspections and heard the men who had been the foremost to denounce us offering to pay out of their own pockets the value of the animals we condemned in case they should not be found after death precisely as we had pronounced them. They should have attended us in our work in the east end of Long Island, and seen that wherever a farmer had taken in a calf out of the infected herd brought from Brooklyn by Billard, there the malady had broken out and decimated the herd. They should have visited with us the fine Jersey herd of Mr. Watrous, Perth Amboy, N. J., where an infected cow, brought from a sale in New York city, introduced

the disease, which proved simply ruinous. They should have visited the extensive and valuable Jersey herd of Mr. James A. Hoyt of Patterson, Putnam Co., N. Y., where the introduction of the infection in four cows from New Jersey and Maryland led to the disease of the entire herd and to the loss of \$20,000 or more. They should have witnessed the losses consequent on the introduction from New York city stock yards of infected animals into the stock farm of Mr. Baldwin, live stock agent of the Erie Railway, into the Westchester herd of Mr. Roach of shipbuilding fame, into the dairy herd of the Bloomingdale Lunatic Asylum, into the herd of the Children's Hospital at Willowbrook, Staten Island, and into a thousand others which it would be too tedious to mention. They should have witnessed the many similar results in New Jersey, Maryland, Delaware and Virginia, and then they would have been in a position to decide justly whether we were dealing with a terribly contagious and fatal disease of the lungs or not.

I mention these cases of recent infection not as desiring to publish that any of the stock specifically named are to-day tainted with this disease, for in every such instance the malady has been stamped out, and the stock can now be certified sound. I adduce them merely as undeniable outbreaks occurring in the herds of men so well-known that no one interested in the subject can have any difficulty in attesting their truth for himself. Let our traducers try to disprove these few instances of the many outbreaks we are prepared to attest. Similar outbreaks are occurring to-day.

The New York Disease Imported.

But some will even deny that the disease prevalent on our eastern seaboard is the genuine lung plague of Europe. Well, it was unknown in America until 1848, when Peter Dunn of Brooklyn bought an English cow from the ship "Washington." This cow died in a few weeks of this lung affection, and the disease quickly spread to his other cows and to those of his neighbors, including the stables of the Skillman Street Distillery, where it continued until 1862 and was recognized by Dr. Thayer and the other members of the Massachusetts Commission.

William Meakim of Bushwick had his herd infected in 1849 by a yoke of oxen employed in drawing grains from the Brooklyn distilleries and lost forty head in three months, and from six to ten head yearly for twenty years thereafter, when he gave up the business. This brings it down to 1869. Since that date I have been frequently consulted about this disease, not in New York only, but in the adjoining states on the south and occasionally in Connecticut.

Why has the Malady not extended West?

From New York the plague has extended two hundred miles in a direction southward, and to-day holds its ground and continues to extend as opportunity offers. It has followed this course simply because the traffic in live stock during the war and since has been active from New York to the large cities on the south and because in and around these large cities, the infection has found that constant interchange of animals and mingling of herds which insures its perpetuation by presenting an endless succession of new and susceptible subjects. The same extension would have taken place over all the large manufacturing cities of New England, but for the careful guardianship of the Cattle Commissioners of Connecticut, who throughout these years have been called upon at frequent intervals to stamp out circumscribed fires of infection lit up by importations from New York.

The plague has not extended westward mainly because there has been so little cattle traffic in that direction. It would have been financial folly at any time to send common cattle west from the great eastern cities, and, thanks to the Alleghenies, there is no large city within two hundred miles of New York in that direction, that would draw upon the market of the latter for dairy cows, or that calculated to keep up the disease by the constant interchanging of animals among herds.

The dangers from thoroughbred cattle sent west were incomparably greater, but several conditions served to reduce the risks of infection by this channel.

First. Thoroughbreds are usually better guarded against danger of contamination, not being sold in the common stock-yards.

Second. Their owners are usually responsible and honorable men who would be little likely to sell at the current high market rate animals that they know to be infected.

Third. Thoroughbreds are always sold with pedigree, and the buyer is fully acquainted with the position and standing of the seller, so that in the case of infected animals the breeder would have been constantly subject to an action for damages.

Fourth. Until recently thoroughbred cattle were comparatively seldom sent west to our unfenced pasturages, so that if some did carry infection into new herds, the latter were still on well fenced farms, and were kept rigidly apart from other stock to secure the purity of the breed; and thus the infection had a good chance to attack all the herd and to die out for lack of fresh susceptible subjects.

Such an immunity of a country in close proximity to an infected one is not at all unprecedented. Europe furnishes an exact parallel. For centuries the lung plague has prevailed in Central Europe, where it is kept up by the active cattle traffic and the constant importations from the infected east. But Spain and Portugal on the south, and Scandinavia on the north, being out of the line of direct traffic, keep clear to the present day—the few invasions of the northern nations having been easily repelled by prompt isolation and slaughter, while the less enterprising southern peninsula has not even once been called upon to suppress an outbreak.

Dangers Increasing.

But our dangers to-day are far greater than they have been in the past. Tens and hundreds of thoroughbred cattle are being constantly shipped to the west, and the great demand is now for the unfenced ranges on the plains and beyond them. There, the disease once introduced, would find all those favorable conditions which have perpetuated it for centuries on the steppes of eastern Europe and Asia, in spite of the best efforts of science, aided by the ungrudging support of the governments. These conditions are identical with those of Australia, where the disease has defied every effort to extirpate it, though these were carried out almost

regardless of expense and of the numbers of animals that might have to be slaughtered. In Tasmania, New Zealand, and South Africa the experience has been the same—the plague, once planted on unfenced ranges, pastured in common by large herds, the property of different owners, has perpetuated itself in spite of every effort of man to suppress it.

Nor is our danger alone from thoroughbred cattle. The great investments in cattle from the plains, and the consequent enhanced prices, have established a trade in common stock for the supply of the western ranches, and young stock are extensively shipped from the Middle and Eastern States to meet the demand. In years past the losses in ventures in young calves have seemed to check the trade, but I regret to say it still continues to a considerable extent, and every such shipment is pregnant with danger.

If there were any hopes of the extinction of the lung plague after it had reached our unfenced pastures, we might find some excuse for those who would have us close our eyes to the danger; but when it threatens us with a tax of \$60,000,000 to \$200,000,000 a year, a tax which must increase in a ratio with the increase of our herds, and which no statesmanship and no financial ability can ever hope to arrest or abolish, we cannot but consider him as an enemy to his country and to humanity, who would counsel or encourage apathy and inaction. Who would cry peace! peace! while a remorseless enemy is at our doors, and his emissaries and battalions are even in our midst, ready to seize on our stronghold? Who would claim health, while the cancer was eating into the tissues and slowly extending toward the vitals? Who would claim security, when the deadly cobra had been roused, and had coiled himself for his fatal spring?

If I speak strongly, it is because I see the full measure of our danger. It is because I have traced the history of this disease in all historic time, and can speak from the unvarying experience of successive centuries and of different hemispheres; it is because I have been honored with a great trust in this matter, and that I would be recreant to that trust, to the country, to my profession and to myself, if I failed to give a warning where danger threatens, and reassurance where our course is safe.

(To be continued.)

EPITHELIOMA CONTAGIOSUM (Bol.)

(SO-CALLED VARIOLA OF BIRDS.)

The minute structure of fowl-pox, by Dr. Csokor, Vienna Oest., IV Jahr, Schrift für Wissen., Vet. Extracts by Dr. R. S. Huidekoper, V.M.

From the earliest times we have had descriptions of the fowl-pox, a contagious disease affecting pigeons, chickens, turkeys, and even hawks. Hensinger, who first thoroughly described the disease, attributes the first mention of it to Arabian writers in the year 572. Crescenzo saw the pustules on the heads and around the eyes of pigeons, and noticed that it was especially epidemic in the summer months. Various writers, mostly from Italy, described this disease, and Bonfatti, Klein and others tried to identify it with variola in man.

Leblanc, Roell, and Bruckmüller regarded it as an ophthalmia. Spinola and D'Arboval doubted the identity of it with variola, and obtained only negative results in reciprocal inoculations of the pustules from fowls, man, sheep, the cow, etc. Rivolta, in 1873, advanced the opinion that the "fowl-pox" was due to a parasite, causing a skin disease, which he called "psorospermosi della cresta." In the same year Dr. Bollinger identified the pustules with a skin neoplasm in man, the "molluscum contagiosum." From Bollinger's researches, it is not a "fowl-pox," but an epithelioma contagiosum, which attacks chickens, pigeons and turkeys, in an epidemic form, during the hot months. As the cause of the molluscum, Bollinger gives a low organism of the group of sporophytes. The following lesions are given by the same author: The emaciated body shows pale muscles, and general anæmia over the head, comb and gills, larynx, throat, palate and tongue, and sometimes in the nostril are found isolated, or confluent nodules, the size of a millet seed to that of a pea, grayish red, smooth or nodular, with starlike dirty gray scabs. In one case, over thirty of these nodules were seen. Microscopical examination showed the formation of epithelioma, with the difference, that, in the protoplasm of the cells were peculiar shining round bodies (18 to 20 mm. diameter), which showed neither

colloid or amyloid reaction. Inoculated fowls, or sound ones placed in contact with affected ones, showed the lesions in about five days; eleven days later the nodules reached the size of peas; by the third week the chickens became dejected, refused their food, and died with the appearance of a general cyanosis. Inoculations on sheep and goats gave negative results; on pigeons the tubercles appeared, but the birds recovered.

From the small amount of literature on the subject, it is evident that this disease in fowls is not analogous to variola, but to mollusum contagiosum.

During the last summer Dr. Csokor received two living and three dead chickens, the last of a coop of thirty, which had died of the same trouble; the origin of the contagion was unknown. Dr. Csokor inoculated other fowls, and obtained the clinical symptoms and pathological lesions of the so-called variola of fowls. He inoculated mollusum contagiosum from man in the combs of chickens, and obtained the same disease. From a review of the work, in this disease in man and in other animals, the author adopts the name given by Bollinger, of epithelioma contagiosum, as being the most proper.

The clinical symptoms are dullness, with standing feathers, distinct chills of the whole body, smooth round, or mulberry shaped tumors, from the size of a hemp seed, to that of a bean, on the comb, gills, around the eyes, ears, and beak; sometimes the top of the tumor was thrown up like a thick crust, with the tissue underneath very moist; the conjunctiva excessively reddened, covered with an exudation of false membrane; the nostrils filled with thick crusty masses; breathing short, accelerated and difficult; the birds stand with the beak on the ground; heart beats rapid, and thumping, not to be counted; on the mucous membrane of the mouth and throat is found an analogous eruption, and false membranes. The course of the disease is short, the birds dying from asphyxia, due to the false membrane in the throat; in one case the lungs were hepatised. After the inoculation of three new birds, the symptoms showed themselves in 6 days: by the 10th day the tumors were the size of peas; these

were covered with scabs on the 15th day; by the 26th day, most of the tumors had disappeared, and by the 32d day the birds had entirely recovered. The tumors were succeeded by cicatrices, on which the feathers reappeared. Birds inoculated by Bollinger all died except a pigeon. The mortality varies greatly with the various epidemics. Whilst these epidemics are most common in summer, Dr. Csokor saw one in February, and a Hungarian colleague says it is most frequent among young turkeys during the spring months. Dr. Csokor prefaces his microscopical study of the eruption by a minute description of the normal histology of the comb, gills, and mucous membrane in the chicken. The former consist simply of stellate connective tissue cells, with isolated elastic fibres, which conjoin to give a fasciculated appearance. Numerous papillæ are found, and the whole is covered by a five-cell or ten-cell layer of membrane; the vascular supply is rich; the tissue belongs to the erectile. After the first tumor appears, it is followed by smaller ones, in the immediate circumference. Other primary nodules, however, soon appear. The beginning of the morbid process is from the rete Malphigii, between the papillæ with increase of the epidermic cells, and rapid proliferation of the nuclei. The cells become dry, and the nuclei are not to be distinguished. In the lower layer are found the peculiar bodies (koerperchen, not colored by eosine) as in the molluscum contagiosum. The peculiar bodies are sickle shaped, lying outside of the cells of the ground substance. They are about the size of the red blood cell, of a greenish tinge, sharply formed, and transparent in the middle. The sickle shape turns to a wedge, lemon, and finally to a round one, the bodies still remaining outside of the cells. Larger bodies are then found in the cells—large shining balls appear in the majority of cases; these belong to the same general class as the *monocystis*, *coccidium oviformi*, and the *psorosperma*, as the author shows from an accurate microscopic study. Dr. Csokor comes to the following conclusions.

1st.—There is *not a variola* of fowls. All heretofore described disease of this kind corresponds to the molluscum contagiosum.

2d.—This disease is best described by the name of *epithelioma contagiosum*.

3d.—This malady is contagious, and is identical with the disease in man.

4th.—The virus lies in the the molluscum bodies. Inoculation gives positive results.

5th.—Whether they are gregarian must be determined by future experiments.

6th.—If they are, their causative action must be further studied.

7th.—The mortality is influenced by the point at which the eruption occurs.

ACTINOMYKOSIS IN NORTH ANDOVER.

BY J. F. WINCHESTER, D.V.S.

In September, 1882, Mr. W. bought a Guernsey bull of Dr. Borland, of New London, Conn., by the name of Sunflower, and soon after having the animal it was noticed that he did not breathe naturally, a sound being emitted at each respiration, which gradually grew worse. The next May his appetite failed, on account of not being able to swallow readily, so that in September he was so emaciated that he was destroyed.

The post mortem revealed the abdominal and thoracic viscera normal, with the exception of a small white and firm nodule in the liver. By removing the larynx and pharynx, I found above them a large firm round tumor, about the size of a foot-ball, which, when opened, was found to contain degenerated pus, containing numerous small yellow masses.

CASE No. 2 OF ACTINOMYKOSIS.—A native cow had first showed signs of failing appetite about the 1st of May, 1883, and early in June she began to breathe hard and lose flesh. Sometime during the month of August the sub-maxillary bone began to enlarge on one side, and continued to grow until the middle of November, when it broke, and discharged a thin pus. The ulcer kept discharging until the latter part of December, when she was killed. On making a post mortem I found the abdominal viscera normal, while the lungs contained a few white hard nodules in the anterior lobes.

On removing the pharynx and larynx I found a post pharyngeal abscess, but not quite as large as that in case No. 1. There was degeneration of the sub-maxillary bone.

CASE No. 3 OF ACTINOMYKOSIS.—Guernsey cow "Cherry." Began to fail in flesh about the 1st of January, 1884, and noticed difficulty in breathing while eating. About the first of February continues to lose flesh, and eats but very little.

EDITORIAL.

DO WE WANT FOREIGN VETERINARIANS?

At the meeting of the Wyoming Stock Growers' Association, held on the 7th of April at Cheyenne, one Mr. Simpson earnestly advocated the engagement of a veterinary surgeon by the Association, who should be exclusively their own property, and nobody else's; and "with due respect to the territorial veterinarians," he would suggest the procurement of an imported article, and recommended "getting one from across the water." He said, "If we had had such a veterinarian during the late scare in Kansas, the damaging mistakes made there would not have occurred."

We need not say that this proposition failed to win the acquiescence of the Association, and that prominent amongst the opposers was Mr. T. Sturgis, one of the most influential stock growers in Wyoming, and to whom is due the credit of all the measures adopted for the elevation of veterinary science in that Territory.

State Veterinarian J. D. Hopkins stated his objections in some well-judged remarks, which, however, owing to his peculiar official position, and his natural moderation and kindness, were characterized by less force than they might have been made to carry. But does Wyoming Territory, or do any other parts of the country need the importation of veterinarians from across the water to protect their domestic animals from contagious diseases? Is it so difficult for an educated veterinarian to recognize one or all of them? Who that has seen pleuro-pneumonia, tuberculosis, foot and mouth disease, glanders, farcy etc., knowing their symptoms and their pathology, can fail

to recognize them? Mistakes are possible; an unnecessary "scare" may follow; but in the present case, *if error existed*, the mistake and the scare have produced much resulting good—if it had not been for their occurrence, the important and beneficent laws which have been enacted would not now exist, and the measures of precaution which are springing up all about us, would have had no being. And again, are veterinarians from across the water infallible in the detection of contagious diseases? The history of rinderpest in England proves the contrary.

But, if we cannot look favorably on Mr. Simpson's motion, is there not something else to be done? There is no doubt that year by year contagious diseases are gaining a foot-hold on our continent. Pleuro pneumonia threatens the large herds of the west. Foot and mouth disease has entered, and may again enter our land. Tuberculosis, glanders, farcy are found in every quarter. Dourine, that dreadful disease of the solipeds, may appear in some of our large breeding farms. Who knows whether, perhaps, rinderpest may not find its way to our shores? And to fight all these, to protect our immense national wealth, we have but a handful of veterinarians, most of them young men, only within the last few years educated for this work.

What we do want—what Wyoming Territory, Nebraska, Dakota, as well as all our large States, where cattle and horses are raised, all need—is to appreciate the value of veterinary education. They must send their sons to veterinary colleges, and must insure their becoming educated veterinarians. The time has passed when young men needed to go abroad to get medical or veterinary education. Let them study at home. There are veterinary colleges in the United States, which they can attend, and acquire all the necessary education, theoretical, as well as practical, and where, as Americans, they can build themselves into noble positions, which they can fill quite as well, if not better than foreign practitioners.

OUTBREAK IN KANSAS.

It is probably, only by degrees, that the profession will be able to come to a conclusion respecting the true nature of the outbreak in Kansas. Having published the report and the opin

ion promulgated by State Veterinarian Holcombe, we lay before our readers, in our present issue, the report of Dr. Faville, together with an extraet from that of State Veterinarian Hopkins. These three reports express very different opinions. On one hand, a severe contagious disease is recognized, which might, after all, have found its way, (and perhaps it has), down to Kansas, seeing it has been permitted to land in Maine. Again, we have a theory of ergotism, to be followed by a third, which determines it to have been foot-rot. If these opinions are authoritative, which one is the right?

Is it not time we heard something from the head-quarters? Cannot the Veterinarian of the Agricultural Department favor the profession with his report? He certainly has had ample time to put it in form, and if experiments have been necessary to a decision, to have given us their results long before this.

The veterinary profession are waiting for the report of Dr. Salmon.

PHYSIOLOGICAL PATHOLOGY.

NEW EXPERIMENTS ON RABIES.

BY MESSRS. PASTEUR, CHAMBERLAND AND ROUX.

(Read before the Academiè des Sciences of Paris.)

The new facts which I solicit the honor in my own and the names of my collaborators to communicate, have all been developed by the use of two highly effective methods. These are the inoculation of the rabid virus on the surface of the brain, by trephining; the other by the injection of that virus into the circulatory system.

The word threphining suggests the idea of a long operation, with a difficult manipulation. But this suggestion is a faulty one. Amongst the hundreds of operations practised upon dogs, rabbits, guinea pigs, hens, monkeys and sheep, the failures count very few. And as to the dexterity in execution which it requires, it is certainly very easy of acquirement by almost any person. A young assistant of my own laboratory very rapidly learned

from Mr. Ronx to perform the operation, and now performs it whenever we require it, almost without accident. It occupies so little time that the last monkey operated upon was chloroformed, trephined, and had recovered from the effects of the anesthetic in twenty minutes, and in less than fifteen minutes more he was eating a fig.

To be brief, I will give you a concise summary of our attained results:

1. In a previous communication I announced that the most frequent result of the inoculation of the rabid virus into the circulating system is paralytic rabies, with absence of rage and rabid barking. It was therefore to be supposed, that under these conditions, the rabid virus ought first to fix itself and grow upon the marrow. In destroying dogs at the moment of the appearance of the first symptoms of paralysis, and also afterwards studying, comparatively, the virulent power of the marrow, principally at the lumbar bulbe and the virulency of the bulb, we have found that the marrow could be rabid where the bulb was not.

2. We have previously shown, that in cases of rabies, the virus had its seat both in the encephalon and in the marrow. We have more recently, looked for it in the nerves proper and in the salivary glands. We have succeeded in giving rabies with portions of the pneumogastric nerve, whether taken at its origin, at its exit from the cranium, or at points more distant. The sciatic nerves have also shown us the virus, as well as the maxillary, parotid and sublingual glands. The entire nervous system, from its center to its periphery, is then susceptible to the cultivation of the rabid virus. We may now understand the nervous superexcitation manifested in many cases of rabies and so often evident in man through the peculiar symptom of aerophobia.

The virulency of the saliva and of the salivary glands has been observed in dogs rendered rabid by intracranial or intravenous inoculation, as upon dogs affected with so-called spontaneous rabies.

3. We have before observed that the rabid virus can be preserved, with all its virulency, in the encephalon and in the mar-

row, during several weeks, when the putrefaction of a cadaver has been prevented by a temperature of 0° to 12° below zero.

We have found that the pure virus, placed in closely sealed tubes, was also preserved, during three weeks, and even a month during the heat of summer.

4. We have again verified the fact that rabid virus may exist in the cephalo-rachidean fluid, but that its presence was not constant and even that this liquid could produce rabies when it had a limpid appearance, but again, would not give it where it had become opalescent.

5. We have made many attempts to cultivate the rabid virus, both in the cephalo-rachidean fluid, and in other substances, and even in marrow extracted in a perfect state of purity from animals killed while in perfect health, but thus far without success. "Can it be that there is no rabid microbe," was one day queried by our confrere, M. Bouley. "I can only assure you," I answered, "that if you present to me a rabid and a healthy brain, I shall be able to tell you by microscopic examination of the substance of the two bulbs, which is diseased and which is not." An immense number of molecular granulations are present in both, but those in the rabid bulb are finer and more numerous, and suggest the belief of a microbe of an extremely small size, having neither the form of the bacillus nor that of contracted micrococcus; they are simply mere points.

By one method only have we been able, so far, to isolate these granulations from all the other elements of the nervous substance. This consists in injecting into the veins of the rabid animal, at the moment when asphyxia begins, the virus taken from the bulb of another animal which has died from rabies. In a very few hours, either because the normal elements of the nervous substances fix themselves upon the capillaries, or, rather, that the blood digests them, there remains in this latter fluid only the infinitely small granulations previously mentioned. Besides, in these quite peculiar circumstances, they can easily be colored by various degrees of aniline. *

* We have not yet the evident proofs that these granulations are absolutely the rabid microbes. We are still investigating this point.

In relation to the blood of rabid animals, we succeeded in one instance in giving rabies to a dog with the blood of a rabbit which had died mad. We shall return to the consideration of this fact, which is one to which great importance attaches. One question has occupied us. The fact is generally known that, usually, the bitten dog, if he becomes mad, exhibits rage, with a desire to bite, and has that special barking known as the *rabid bark*. In the ordinary condition of our experiments, when we inoculate the rabid virus into a vein, or into the subcutaneous cellular tissue, it is the paralytic form, without rage or barking, which commonly follows. Trephining on the contrary, gives rise to furious rabies. We have observed, also, that it was possible to obtain furious rabies by the intra-venous, or hypodermic inoculation, the only condition necessary being that we shall use very small portions of virus. The smaller the amount that is used in hypodermic or intra-venous inoculation, the more readily the furious variety of rabies is produced. We have also observed that the use of small quantities in the inoculation may greatly extend the incubations, and that in carrying the dilution beyond a certain limit, not very high, the inoculation remains without effect. The interest attaching to these conclusions justifies me in reporting the details of two experiments.

On the 6th of May, 1883, three dogs were inoculated in the vein of the right hind leg, with rabid virus in a sterilized bouillon. The first dog had $\frac{1}{2}$ cubic centimeter; the second, 1-100; the third, 1-200.

On the tenth day the first dog had lost his ordinary appetite; on the eighteenth, was entirely paralyzed, and died two days later, without bark or rage. The second dog continued to eat on the thirty-seventh day after inoculation; the day following he presented suspicious appearances; on the next, or thirty ninth day, he had the rabid voice, and died on the following day. The third dog did not become mad.

In another experiment, inoculation was performed on a first dog, of one cubic centimeter of rabid matter, in sterilized bouillon; a second received 1-20; and a third, 1-50 of the same matter.

The duration of incubation has been, respectively, seven, twenty and twenty-five days. The first two dogs had the paralytic, and the third the furious barking and biting form of rabies.

We have verified the fact that, although small quantities may have failed to produce rabies, the animal may secure it by new inoculations. In other words, inoculations of small quantities do not insure immunity.

(To be continued.)

EXTRACTS FROM FOREIGN JOURNALS.

ELIMINATION OF THE LEFT KIDNEY, FOLLOWING AN INCISION IN THE RUMEN OF A COW.

BY M. MICHAUD.

The subject of this case was an animal which had been operated upon by an empiric, by an incision of the rumen, for the relief of an excessive meteorization. Six days afterward she was in a very bad condition and had lost flesh considerably. The parts where she had been operated upon were covered with a thick plaster of pitch. The incision, which had been made at the left flank and through the rumen, in order to allow the removal of food from the cavity of that organ, was closed by the plaster. This being washed off the infiltrated edges appeared covered with food expelled from the rumen and mixed with sloughing cellular tissue. The part had become the seat of a very offensive odor. The division of the tissues had been made quite near to the last rib and parallel with it, and extended to the transverse processes of the lumbar vetebræ. The prognosis was a very serious one. The wound was carefully cleaned and dressed several times a day, with phenic solution, and covered with a compress of the same kind. A few days later the parts had begun to look better; sloughing cellular tissue was easily removed, but the bottom of the wound appeared a greasy, diseased mass of similar tissue, to remove which required the introduction of the hand into the abdominal cavity. Upon the removal and examination of this mass it proved

to be principally composed of the left kidney, softened and atrophied, the structure of which had undergone partial purulent degeneration. The owner having refused to have the cow destroyed, she was treated to dressings of permanganate of potash solution (1 to 10), and after a slow and tedious course of treatment made a complete recovery.—*Journal de Zootechnie*.

CONTINUED PRESENCE OF THE URACHUS, ACCOMPANIED WITH
ANAL IMPERFORATION AND VESICO-RECTAL COMMUNICATION.

BY M. M. KAUFMANN AND BLANC.

A calf, 13 days old, presented a large ventral hernia posterior to the umbilicus, and on the left of the linea alba. On the right of the tumor, the orifice of the sheath resembled a vulva, from which the urine and the fœces escaped. The anus was imperforate and the penis normally developed. At the post-mortem it was found that besides the ventral hernia, which was formed by the posterior part of the abomasum and some intestinal folds, the floating colon terminated by a cœcum turned towards the imperforate anal region. The urachus was existing and opened on the sheath alongside the extremity of the penis, which had a urethral canal closed in its whole length. These abnormal features all resulted from the imperforation of the anus. The fœces accumulating at the extremity of the floating colon, first distended it and then transformed it into a cœcum. The distension continuing, an artificial anus was formed by an opening taking place into the bladder, but as the urethra was closed, the only escape for the urine and fœces was through the urachus, which had remained open.—*Journal de Zootechnie*.

A CASE OF TRIORCHYDIA.

BY M. LETARD.

The author was called to castrate a yearling Percheron. The process employed was that of the clams; the operation being by covered testicle. The two testicles removed were small, soft and hanging at the end of a comparatively large cord. The animal

made a good recovery. A year later Mr. L. was called to the same place to give his attention to an animal suffering with vertigo, and was then informed that the colt he had castrated a year before was as ardent and troublesome with mares as if he had not been altered. On careful examination of the animal, now a well-developed two-and-a-half-year-old colt, the inguinal region presented on the right side a movable tumor, well up in the inguinal canal, of the size of a billiard ball, and hanging at the extremity of the testicular cord. The animal was then operated upon a second time, the operation being rendered difficult on account of the adhesions of the organ with the surrounding tissues. The testicle was of normal size and had the shape of a pear, the cord being quite small with an atrophied character, presenting towards its middle a cylindrical mass of fibrous consistency, of the size of a quill. It was the remaining portion of the cord from which a testicle was removed at the first operation. —*Archives Veterinaires*.

REDUCTION OF FOUR INGUINAL HERNIA ON THE SAME ANIMAL.

BY M. BONNIGAL.

A stallion, four years old, was subject to frequent colics, probably due to inguinal hernia, which were reduced spontaneously during the struggles of the animal. One day, the colic continuing, the author was called in and found a case of strangulated hernia. Being unable to reduce it, the operation was performed, thirteen hours after the first symptoms of colic. Though some difficulties were encountered during the operation, it proved successful, and the animal returned to his work six weeks after.

Two weeks later another attack of colic occurred. This proved to be a hernia of the left inguinal region, which after numerous attempts was at last reduced. Fearing to castrate, on account of the excessive warmth of the weather, the animal was left alone, to be again attacked with the former trouble after eight days. Being once more relieved, he remained hearty for three weeks more, when he was again ruptured. He was then castrated. The recovery was complete.—*Presse Veterinaire*.

REVIEW.

THE RELATIONS OF ANIMAL DISEASES TO THE PUBLIC HEALTH, AND THEIR PREVENTION,

BY FRANK S. BILLINGS, D.V.S., Graduate of the Royal Veterinary Institute of Berlin; Member of the Royal Veterinary Association of the Province of Brandenburg, Honorary Member of the Veterinary Society of Montreal, Canada, &c.

Since his return to the United States from his European visit, where the author of this volume had been perfecting his professional studies at the Veterinary Institute of Berlin, of which he is the first American graduate, Mr. Billings has directed the principal efforts of his professional career to the aim of placing himself before the public as the champion of the necessity of the establishment of a National Veterinary School in this country. Having at various times appealed by his writings in a series of published articles referring to that subject, he has to-day crowned his former efforts by the publication of the "Relations of Animal Diseases, etc.," as explicatory of the powerful reasons which render the foundation of such a national institution imperative and desirable. The work appears in a handsome volume of over 400 pages, brought out in a handsome and attractive style, and written in his own peculiar, enthusiastic and earnest tone and manner. The work possesses many excellent points, but would have lost none of its value if the language of the author had been, in many cases, less severe, and in many parts uncompromising. *La critique est aisée*, and the ability to criticise well or severely, is not the only quality required to insure a desirable result, however good and commendable that may be.

The "Relations of Animal Diseases" is divided into three parts.

The first treats of some of the diseases of domestic animals. Trichiniasis is a subject to which Mr. Billings has given a large amount of attention. The long article published some time since in these pages on that subject, will suffice to satisfy the reader in quest of discoveries of interest, of the value of the work, and especially at a period when, as at the present time, the question

of the existence of this disease in American swine is exciting so large a degree of interest in Europe. Hog cholera, tuberculosis, accompanied with an excellent article on infection and bacteria, anthrax, Texas fever, rabies and glanders, complete the first part. It occurs to us that in treating of the various diseases, it is to be regretted that Mr. Billings has not entered a little more fully into the minutiae of the new discoveries recently achieved by European veterinarians in some of these affections. But the work was, of course, not designed to be a book on practice, nor on sanitary medicine, and probably what is said touching these matters will be considered sufficient to give weight to the main object in view. This is gradually brought forward in Part Second, and well developed in the concluding division.

Yet why do we find no mention of certain other affections, such as pleuro-pneumonia contagiosa, eczema contagiosa, and others? Might they not have proved as important and interesting in the view of those to whom the book is, probably, principally directed, viz.: members of Congress, of the various departments, or of the General and various State Governments?

In Part Second the reader is treated to a history of veterinary medicine, not in this country, but in Europe. We earnestly recommend this portion of the work to the reader's attention. It is the result of careful compilation and research, and is probably one of the best we have ever seen. Taking up the subject from the most remote periods of antiquity, the author brings us down by degrees to the day of the foundation of veterinary schools in Europe, dwelling principally on the schools of Germany and the Veterinary Institute of Prussia, which seems to be exhibited to us as the typical institution of the world. Nothing less could be expected than this expression of the love and admiration of an alumnus for his alma mater.

This part is concluded by the publication of the Prussian Laws for the Suppression of Contagious Animal Diseases, and if we did not know our friend Billings to be a thorough American at heart, as he truly is, we should certainly credit him with a German nativity.

In Part Three the author reaches the main object of his ex-

cellent work. Having first shown the danger to the human race of animal diseases, and secondly, placed before his readers the methods by which these dangers are avoided in Germany, he now calls upon us for the means of checking them in the United States, which may be comprehensively stated to be the establishment of a national veterinary police system and a National Veterinary Institute.

Every lover of his profession will agree with the idea, and every veterinarian will certainly endorse the principle laid down in the views so strongly, and, at times, too strongly, expressed. But to arrive at this conclusion, was it necessary to speak, as the author has done, of the attempts which have been made to establish veterinary schools by private enterprise? These efforts have, in some cases, at least, originated in disinterested motives; as much so, at least, as those which usually lie at the foundation of business endeavors, and have not been started with the sole consideration "*whether it would pay or not, in the American sense,*" but with the honorable object of educating, as well as possible, young men desiring it, in the various departments of veterinary medicine. It ought not to be expected that these schools; in which the gentlemen engaged in teaching are contributing their time and labor without either private, city, State or general governmental financial support, can accomplish results such as the large schools of Europe can bring forth, with the assistance of a heavy financial budget. And still, these private schools, asking nothing, expecting nothing, *non-paying* institutions, keep on with their work, which they believe has not proved altogether worthless.

Taken altogether, the "Relations of Animal Diseases" will prove an excellent acquisition for every one who is a lover of livestock and of his own welfare, and is mindful of his personal value from the point of view of our national wealth. It must find its way into every veterinary library, and in producing it Mr. Billings has done well, and merits the sincere good wishes of all for its success, and that of his efforts in aiding in the creation in America of a National Veterinary School. (L.)

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held at the American Veterinary College, on Tuesday, April 8th, at 8 P. M.

The President, Dr. Liautard, in the chair.

Members present were, Drs. Burden, Field, Robertson, Coates, L. McLean, Kemp, R. McLean, Dixon, Johnson, Bath, Pendry, Bretherton, Walton, Denslow, and Charum.

Minutes of last meeting read and adopted.

The Chair stated the Society would, for the present, continue to enjoy the hospitality of the College, and hold its meetings in the Lecture-Room of that institution, and obviate the expense of meeting elsewhere.

Dr. J. S. Kemp, being called upon to read his promised paper, stated that he had concluded to read upon a subject they no doubt were well acquainted with. *He* called it "Mud Fever," but had been able to find but little or no information on the subject in the text books, so, consequently, would have to give his own experience. His paper, therefore, would naturally be short, yet he trusted it would serve the requisite purpose, of drawing out the ideas and opinions of those present.

He read as follows :

FROST BITES—"MUD FEVER."

Under this heading, which I have adopted for the want of a more suitable one, I shall attempt to describe a peculiar affection of the phalangeal region of the horse, which I have had the opportunity to observe during the winter just past. Possibly "Sloughing and Healing" would be a more appropriate heading under which to write on this subject, for this is precisely what occurs in the course of an attack of so-called "mud fever," which has prevailed epizootically during the past winter.

"Mud fever" might be defined as an inflammation affecting one or more circumscribed portions of the phalangeal region; an inflammation which, although it has no tendency to spread later-

ally, invades the subcutaneous areola and aponeurotic structures, and is followed by a sloughing of the portion of skin involved and the connective tissue beneath.

In many cases the process resembles the suppurative termination of a contused wound, plastic infiltration existing at first, followed by suppuration, which soon attacks the skin, which it perforates from within outward, exposing an irregular cavity in which the subcutaneous connective tissue is represented by masses of shreddy sloughs, soaked in a puriform fluid, mixed with coagulated lymph and blood.

In regard to the causes which operate to produce these changes, there is but one which I can assign as the direct cause—and that is cold. I do not attribute it to low atmospheric temperature, nor to snow or ice—which do not produce a degree of cold greater than 32° Fahrenheit—but to artificial cold, caused by the admixture of salt with the snow in the streets. When salt is mixed with snow in equal parts, an extreme degree of cold is attained, the temperature being reduced from zero, Fahrenheit, to 18° below. The effect of such intense cold upon the integuments of a region so meagerly supplied with blood vessels, and so far away from the centre of circulation as the phalangeal region of the horse, can readily be imagined: congelation must follow, and gangrene is the result, the animal, in the great majority of cases, being taken from the streets into a hot stable where his feet and legs are surrounded with straw. Moreover, the effects of dry cold are much less injurious to the part where it is applied than cold associated with moisture, and it is to wet and cold at the same time that these horses' feet are exposed. Although the various forms of eczematoses, familiarly known as "scratches," "grease," and "chapping," are met with during the entire winter, the deep sloughings to which I have alluded occur only while the streets contain snow and ice, which fact leads me to the conclusion that excessive cold is the sole cause of their development.

Pathology.—The effect of extreme cold on the animal body is to lower all vital activity. Whether this extinction of vitality is general or local depends upon whether the entire body or a portion only is exposed to its effects. The blood vessels of the

exposed part, after first dilating, contract to such an extent as not to admit of the passage of the blood corpuscles—the physiological processes necessary to life cannot go on, and the part is destroyed.

Symptoms.—As a rule horses that are used for business purposes, and spend most of the time in the streets are the sufferers. The first symptom noticed is that of lameness—generally of one of the posterior extremities. At the same time the leg is noticed to be somewhat swollen as far as the hock. The lameness increases, and by the third day after its first appearance the animal is unwilling to put the foot to the ground. If examined at this time the seat of the injury (generally located in the space between the ergot and the glomes of the frog) is found to be swollen and œdematous, pitting on pressure, and excessively painful—the slightest touch causing the animal to throw the leg violently outward at right angles with the body. About the fifth day the skin is perforated from within outward, and a quantity of sero-purulent fluid escapes. In a short time a portion of the skin surrounding the perforation detaches itself and leaves exposed an irregular cavity sometimes an inch in depth. This cavity slowly fills up by granulations. The treatment is simple, being directed toward the promotion of the suppurative process, and the detachment of the gangrenous tissue. After this has been effected the cavity which remains is to be treated like an ordinary granulating wound.

In answer, Dr. Kemp held with poulticing, and considered it was due to cold, and consequent loss of vitality. Dr. R. McLean questioned, if it was due to cold, and alternation of heat. He had seen several very bad cases lately, yet there had been no cold weather or salt. He questioned, if the causes were such as laid down by the essayist. In large stables, only a few horses were found to be affected with mud fever. He spoke of one case that had come under his notice, of a horse having stood for some time in caustic soda and potash, which resulted in the horse having this so-called trouble.

Dr. W. J. Coates contended, that “frost bite” and “mud fever” were here misapplied; a frost bite was a cause. Erythema, or mud fever, was a better term. Mud generally on the skin,

received more or less friction, which would set up a fever. Treatment ought to be according to the cause; if sloughing, poultice—poultice would be good, as it hastened it.

Dr. Kemp thought that erythema was a wrong term to apply, when the trouble was due to chafing.

Dr. Coates said, if vitality is destroyed, sloughing must take place. Ice on surface, was a cause of loss of vitality. It might even be due to frost bite, or even a burn.

Dr. C. Burden admitted that it was generally thought to be due to cold, yet there have been more cases of late, although there had been no cold weather.

Dr. S. K. Johnson thought there were other predisposing causes, and spoke of the practice of washing off the mud in some stables, and not in others, and of the different results.

Dr. L. McLean wanted to know where the line was to be drawn between frost bite and mud fever and scratches, and asked if scratches was to be excluded, and mud fever to be considered a frost bite.

Dr. Kemp drew no line between the two.

Dr. R. McLean considered it erythema, having only a deeper effect; what the cause was it was hard to say. He referred to a stable of thirty-six horses, which, last year, had had the hair on the fetlocks cut close, and washed regularly, yet had been considerably troubled with mud fever and scratches; this year this had not been done, and there had been less trouble.

Dr. Kemp contended that mud was of no benefit, and ought not to be allowed to remain on all night.

Dr. R. McLean said the mud was rubbed in.

Dr. Kemp did not consider that rubbing the mud in was washing it off.

Dr. Pendry contended, that where this trouble appeared to follow washing, it was not due to that act, but entirely due to the careless and improper way the washing was done, and more particularly in not properly drying the parts after. He failed to see any virtue in mud, gathered by the horses from the dirty streets, and thought that the sooner the fetlocks were relieved from such mud the better.

Dr. R. McLean had seen as much scratches and mud fever as ever lately, although there had been no cold or frost. It was a question if it was not due to some atmospheric influences. He did not consider it was contagious.

Dr. J. D. Dixon favored the idea of its being epizootic; that it was possible to be so and yet not contagious; considered the cause was cold; when frostbitten, the bad effects may not be developed for some considerable time after. To prove the possibility of this theory, he spoke of having one of his ears frost bitten, and not feeling the bad effects until six months after. One case he had treated, he traced the cause to ashes from a gas house; another had come under his notice, where the owner of a horse which was badly affected with the trouble under discussion, used the animal for carting manure. The animal's feet were nearly all the time in it. The result was that the horse made a good recovery without any treatment.

Dr. R. McLean could not see how it was possible that the disease could lay dormant for so long a time.

Dr. Kemp referred to a case, where each leg was affected with mud fever, one after the other—as soon as the one was all right the other became affected.

Dr. L. McLean questioned whether some of these cases were not confounded with equine variola.

Dr. W. C. Bretherton asked how were cases to be accounted for that were met with in the summer. He had been called upon to treat cases during that time.

Dr. Jas. L. Robertson thought Williams spoke of "Mud Fever" in his surgery. There were different results due to different causes. The causes might yet be found to be parasitic; he was inclined to that belief, and, too, considered it might be contagious.

Dr. E. Charum considered the disease was due more from irritation than cold; he held that mud fever and frost bites were two different troubles due from different causes, considered that the cold easterly winds had much to do with the outbreak. The treatment he used was dressing the parts with vaseline, oxide

of zinc and camphor, one part to eight, giving plethoric horses a cathartic.

Dr. R. McLean disagreed with this idea as to cause; thought treatment good except the reason given for giving the cathartic.

Dr. L. McLean thought there might be something in the theory of cold winds, but too much should not be laid to that cause. He could not see how a cathartic would reduce a fever.

Dr. Pendry said he found that where he gave a cathartic the cases seem to do better. He used as a wash the ordinary white lotion, adding tannic acid, one to sixteen, which appeared to work well.

Dr. Liautard thought that possibly the cause would some time be found to be due to a parasite. He certainly favored the idea, although he had not been able to give that part of the subject sufficient thought and attention to be able to express a direct opinion. He thought no general treatment could be laid down, but objected to greasy substances, as, when used in his practice, the cases seem to get worse. He had used iodoform with good results.

After a vote of thanks to the essayist the meeting went into Committee of the Whole, who, on rising reported the election of F. S. Allen, D.V.S.; J. E. Ryder, D.V.S.; Phillip Newman, D.V.S.; and E. A. Parsons, D.V.S., to membership.

The Committee on Bill reported that they considered it too late to approach the House of Assembly with any bill this session, and recommended the matter to be made a special order of business, at the regular September meeting. The report was received and the subject ordered to be made a special order for September meeting.

Dr. W. H. Arrowsmith, Jersey City, was proposed for membership.

J. H. Raymond, M.D., Commissioner Board of Health, Brooklyn, was proposed as an honorary member, as a mark of appreciation of his official recognition of the veterinary profession.

Dr. S. S. Field was appointed essayist for the next meeting.

W. H. PENDRY, *Sec.*

THE CONNECTICUT VETERINARY MEDICAL SOCIETY.

The first regular meeting of this Society was held in Waterbury, Tuesday afternoon, April 1st., the President, Dr. W. T. Sullivan, New Haven, in the chair.

There were present Messrs. E. A. McClellan, Bridgeport; W. K. Lewis, Meriden; Nathan Tibbals, New Haven; Geo. H. Parkinson, Middletown, and Thomas Bland, Waterbury.

Telegrams of excuse were received from Messrs. A. Murray, Stamford, and H. J. McHugh, New Haven. A letter was read from Prof. Liantard, congratulating the Society on its formation and wishing it success.

The President then delivered a very lengthy and able address, his subject being operative surgery.

Considerable disappointment was felt at the absence of Dr. McHugh, as he was to have read a paper on cerebro-spinal-meningitis.

Many interesting cases were spoken off and freely discussed. Dr. E. A. McClellan spoke of the favorable results obtained in cases of impaction, by the intravenous injection of physostigminum, and stated that he had met with negative results by the subcutaneous method. Dr. Parkinson said he had used the alkaloid subcutaneously with negative results, and that he attributed it to the impurity of the drug.

Dr. Tibbals did not believe in the use of the trocar in cases of tympanitis. Messrs. McClellan and Bland were quite enthusiastic as to its use, and stated that it not only relieved the suffering animal at once, but made the administration of medicine much easier and accompanied with less danger. One of the members said he always found the easiest way to administer linseed oil to horses was through the nostrils, and had never seen any injurious effects from so doing. Thos. Bland considered it was far from being scientific and was undoubtedly a dangerous practice, having seen bad results accrue therefrom, not at his hands, but at the hands of ignorant empirics, and would advise practitioners never to resort to such means, as they not only laid themselves open to censure and criticisms by the profession but by the public generally. These views were well supported.

Dr. Lewis spoke of a very easy and simple remedy for quitters and promised to enlighten the Society on that subject at the next meeting.

The following gentlemen were unanimously elected to membership: Drs. F. F. Rice, Hartford; E. C. Ross, New Haven; F. W. McClellan, Bridgeport, and A. D. Sturges, Wilton.

As only the Chairman of the Board of Censors was elected at the preliminary meeting, on account of an insufficient number of members, it was very gratifying to receive four new and able gentlemen into the Society.

The Board of Censors was at once made complete by the unanimous election of the following gentlemen: Messrs. Geo. H. Parkinson, F. W. McClellan, F. E. Rice and A. D. Sturges.

It was unanimously agreed that all meetings hereafter shall be held in New Haven, it being easier of access, and, in train accommodations better than other Connecticut cities.

The meeting terminated with a vote of thanks to the President for his interesting address.

The members afterwards did justice to a fine collation at the Park Hotel.

THOMAS BLAND, Secretary.

MASSACHUSETTS VETERINARY ASSOCIATION.

In conformity to the preliminary meeting, the committee called a meeting at the United States Hotel April 2, 1884, with F. H. Osgood, Chairman, and M. Bunker, Secretary, when they reported favorably in regard to all diplomas presented to them.

It was moved and seconded: "That those of the original members who did not have their diplomas at the meeting of the committee, be now examined." Carried.

It was moved and seconded: "That after to-night, no diplomas will be examined by this committee." Carried.

Committee reported favorable on all but C. H. Hollis, which was not presented.

Committee was then discharged.

Moved and seconded: "That we resolve ourselves into the

Massachusetts Veterinary Association, and ballot for President, Vice-President, Secretary and Treasurer, and an Executive Committee of three."

W. Bryden, V. S., of Boston, President, F. H. Osgood, M. R. C. V. S., of Springfield, Vice-President, J. F. Winchester, D.V.S. Lawrence, Secretary and Treasurer. F. S. Billings, V. M., of Boston, J. S. Saunders, D.V.S., of Boston, and C. P. Lyman, F.R.C.V.S., of Boston, the Executive Committees.

Moved and seconded: "That the Executive Committee draw a set of By-Laws and Constitution, to be presented at the next meeting of the Massachusetts Veterinary Association." Carried.

Moved and seconded: "That any diplomas which may be at this meeting, be presented to the Executive Committee for acceptance, and the gentlemen be admitted as charter members, but no others shall be admitted hereafter as such." Lost.

Moved and seconded: "That the next meeting be held the first Wednesday in May, at the United States Hotel, at 7 P. M., and the Secretary notify each member." Carried.

Moved and seconded: "That there be an assessment of one dollar on each member." Carried.

Dr. Billings was appointed essayist for next meeting.

Moved and seconded: "That the meeting adjourn." Carried.

W. BRYDEN, V.S.,
President.

J. F. WINCHESTER, D.V.S.,
Secretary.

CORRESPONDENCE.

CONTAGION OF GLANDERS TO MAN.

ROCKVILLE, CONN. March 31, 1884.

A. Liautard, M.D., V.S.:

DEAR SIR—I send you herewith an article taken this week from the *Tolland County Leader*, a paper published in Rockville, Conn.

It seems to me that this case had ought to be quoted in all the veterinary journals, as showing the liability of human pa-

tients to contract this disease, and to call the attention of veterinarians and other interested parties to the fact that in many States very imperfect legislation exists on this subject, which is so eminently dangerous to man and beast.

I remain, very truly yours,

W. FRANK FAY.

Not a great while ago Orrin S. Todd, who lives about three miles from Tolland St., on the Wilmington road, purchased a horse of a man who came along. At that time or soon after, he noticed that the animal had what he supposed to be a cold, which was finally quite severe. He proceeded to doctor it in various ways, such as blowing smoke into its nostrils, etc. About two weeks ago Mr. Todd was taken sick, the symptoms being similar to a case of pneumonia. Afterwards they assumed those of rheumatism. At one time the joints swelled, and finally there were pimples or blisters noticed. Later there was mattery discharges from the nostrils.

Dr. Johnson of Mansfield had charge of the case, and was satisfied that it was an actual case of glanders, which were communicated from the horse. On Saturday last, Dr. Gilnack consulted with Dr. Johnson, and his decision was the same. Medical aid seemed unavailing, and the patient died on Monday, the funeral taking place yesterday.

It is stated, though unauthoritatively, that the horse was one of the several which was sometime ago pronounced unsound in Rockville, though Mr. Todd did not procure him from this way, and probably knew nothing of the circumstances. The case shows that a glandered horse is not just the animal to have around.

LITTLE OR NOTHING TO ADD.

Editor American Veterinary Review :

In the last number of the REVIEW, Mr. Plageman takes exception to my report of the conference held lately in Brooklyn, respecting pleuro-pneumonia.

He starts off by saying that I have "misrepresented some

statements made in connection with the questions put to me by the Commissioner." Is he trying to impress upon the readers of the REVIEW that he was the most important person at the meeting, and occupied the attention of those present for a long time? When the fact is, he said so little, (whether or not, from lack of knowledge on the subject, it is not for me to say) that it is now, at this date, very little trouble to remember what he did say. He says I state, "he had nothing to add to what had already been said," and adds "I am positive I stated, 'I had very little to add.' Here is certainly a distinction with—of course, in my opinion—a very slight difference. Anyway, it is splitting hairs too fine for me, and I will allow him that point, and say, he had "*very little* to add." Again, he has no recollection of saying any such words, as "there were others present, who had had far more experience with pleuropneumonia." It is my turn to say "emphatically," that this is, in substance, reported correctly. He did pay this just tribute to gentlemen who were present; such a remark was no discredit to him. Surely he must have forgotten who some of the gentlemen were, who were there, or he would never have taken exception to that point of my report. My answer here, is: *He did so state, as reported.* Now, with regard to the question by the Chair, as to the "qualifications required for a veterinary surgeon," and he "emphatically" denying that he said "there were none," I can simply say, that he must have no recollection, whatever, of what he really did say there, if he persists in denying that he made any such statement. Here again, there was no reflection upon him, he simply stated what was perfectly true. There are, at present in the State of New York, no legal qualifications required for a veterinary surgeon. I do not think the Chair used the word "legal," but every one present, accepted the question in that light, which I am sure was so intended, and so replied to. If not, why did Dr. Peters (I did not know who the gentleman was at the time I wrote) follow by making the remark he did, viz: "I understand that lately, there has been a law passed in Illinois, which prevents any veterinary surgeon practicing unless he holds a diploma," and, I contend, it would not "have been absurd for him (The Chairman) to ask such a question." I consider it was a

proper question, and I am sure, was put in a proper spirit. I simply again, "emphatically say," *that such a question was asked, and answered by Plageman as reported.*

Now, for the insulting part of his letter. What have "essential requirements" got to do with "a truthful report?" I am not given to making wrong statements maliciously, and of this, *I am* able "to form an opinion" and back it in any shape or form any one interested may desire. He writes, "it will give him an opportunity to correct his statements, and for the future, be a little more just in his remarks, especially to his senior and more qualified veterinary surgeon." I have embraced the opportunity, as you will see, in the latter part of his comment. I think it enough to quote the two following lines:

"Oh wad some power the giftie gie us,
To see oursel's as ithers see us."

I trust I shall be pardoned for saying that *I* do not consider *him* a "more qualified veterinary surgeon" than I am.

He follows in a strain that leads me to suppose that some one had had occasion to criticise some former communication of his. I looked through the back numbers of the REVIEW, and found some one had been "ridiculing" him, (in numbers for December, 1878, and January, 1879), so that I pass over that part of his letter, as not referring to me, though I should hardly have thought "a superior veterinary surgeon," who states he is a M.R.C.V.S., would lay himself open to such criticism as that given by "Nemo." He says he is proud of his title; I suppose he is. It is one that members of my family have enjoyed as far back as 1826—and one held the position of Vice-President of the Royal College for a term—but I can assure him that I am just as proud of being a D.V.S. He must not forget either that at the present day veterinary surgery is more a science than it was thirty or forty years ago. He claims that he has "had ample opportunities to correct blunders made by veterinary surgeons just out of their pupilage, and others that have been years in practice," but he was "generous enough to overlook them." Well! I'll be generous enough, in the interests of the profession, to make no comment. He claims, as a mark of distinction, that he prac-

ticed with a veterinary surgeon before entering college. I think, he will find that this is the case—as in my own—with nearly all those who now graduate.

In conclusion, I would refer your readers to his letter, the cause of it, and this answer, and ask who has done the “slurring,” or where the term “maliciousness” is applicable.

I am sorry to trouble you with so long a communication, but am obliged to do so, in justice to myself, my friends, and the members of the profession who have graduated in this country, for I consider, as others do, he has, through me, aimed an insult at all American graduates of veterinary surgery.

Respectfully yours,

W. H. PENDRY, D.V.S.

Brooklyn, March 20, 1884.

VETERINARIAN WANTED.

MINNEAPOLIS, MINN., April 16, 1884.

DEAR SIR.—Do you know of any young man, a graduate of your college, who would like to come to this city and take charge of about five hundred head of horses, and devote part of his time to working up an outside practice? It strikes me that this would be a good opening for a young man just starting out.

A good man could command all the outside business he could attend to.

Yours, truly,

M. ELDER,

Box 371, Minneapolis.

NEWS AND SUNDRIES.

BLIND CALVES.—Three cows in Nantucket, Mass., have this spring given birth to calves without eyes.

PROLIFIC EWES.—A Virginia farmer last year raised ninety lambs from sixty-seven Shropshiredown sheep.

REMOVAL OF EMBARGO.—The State Department is officially advised that Greece has removed the embargo on American pork.

GLANDERS.—An outbreak of glanders on the farm of Mark Miles, near Fossland, Illinois, was met by the shooting of five horses and the burning of the barn and harness.—*Prairie Farmer*.

♂ TRICHINIASIS IN PENNSYLVANIA.—A newspaper report from Pittsburgh states that trichiniasis caused a death in Westmoreland county last week, and that six persons are dangerously sick with the same affection.

SWINE DISEASE.—Hogs in and around Denver have been dying in great numbers from lung disease. The appointment of a swine inspector at Denver is talked of, as it is supposed some of the diseased animals were disposed of there for human food.—*Prairie Farmer*.

TRICHINIASIS.—The Senate Committee on Foreign Relations, if we may judge from a bill it has reported to the Senate, is content to rely on thorough salting as a safeguard against injury from the use of trichinous pork, sufficient time being allowed to elapse to insure the permeation of the meat by the salt.—*N. Y. Med. Journal*.

A DAIRY EXHIBIT AT MUNICH.—The American government has received an invitation to participate in an exhibition of dairy products at Munich, in October, 1884, under the management of the General Committee of the Agricultural Union of Bavaria, in connection with the Bremen Dairymen's Union.—*Scientific American*.

OSTRICH FARMING.—The following report shows the value of ostrich farming going on in Southern California: "The ostriches on the Anaheim farm laid 305 eggs during the season from the 1st of May last until the 1st of October. The birds have been plucked twice since their arrival on the farm. The first clip, in May last, yielded \$500. The clip in December yielded 2,500 quills of all kinds, from 18 birds, and is valued at \$1,000."—*Home, Farm and Factory*.

MEAT INSPECTION.—The inspection of meat in New York is in a fair way to be made much more thorough than it has been

heretofore, bills having been introduced into both houses of the Legislature providing for the appointment of five inspectors of meat by the Board of Health, and making it a punishable offense to offer for sale any meat [that has not been inspected by them, the inspection to be repeated every second day until the meat is sold.—*N. Y. Med. Journal*.

A GOOD RIDDANCE.—The foot and mouth disease at Falmouth and Deering has entirely disappeared. The cattle have all recovered and now are considered well, though in somewhat of a depreciated condition in consequence of their sickness. The commissioners commenced last week the work of disinfecting the stables and premises, and it will be continued in the order of the dates of the recovery of the animals, after which the quarantine will be relieved, if no further cases appear. The hay in the barns will be held for the use of the cattle till the pasturing season, when the disposition of that which remains will be considered by the commissioners.—*Prairie Farmer*.

WHAT IS CONTAGION? WHAT IS INFECTION?—Dr.—of W.—appeared before the special committee last night, to further explain the so-called foot and mouth disease. Being asked by Dr. Cartter to explain what contagion was, he replied:

“Contagion is nothing but worms and bugs, for instance, the same as seen in trichinæ in hogs. One would take it and then another, by rubbing against each other, giving the worms and bugs a chance to crawl and jump over.”

“What is infection?”

“The same as contagion, only not quite so wormy and buggy. It is not so easily caught by the neighbors of the animal that has 'em.”—*Ext. Kansas paper*.

TURPENTINE IN INFECTIOUS DISEASES.—The *Med. Record* tells us that H. Vilandt writes in the *Ugeskrift for Læger*, concerning the value of the oil of turpentine in the treatment and prophylaxis of diphtheria and the exanthematous diseases. He states that he has never seen any of these diseases spread from a sick child to other members of the family when this remedy was applied. In many of his cases no isolation could be attempted, as the mother

was the only female in the family, and was obliged to take care of both the sick and the well, continually passing back and forth from one to the other. His method was to pour from twenty to forty drops of a mixture of equal parts of turpentine and carbolic acid into a kettle of water, which was kept simmering over a slow fire, so that the air of the sick room was constantly impregnated with the odor of these two substances. He claims also that by this means a favorable influence is exerted upon the exudation in diphtheria, although it is by no means curative of the disease, and should never be relied upon to the exclusion of other remedies.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Gazette Medicale, Revue Scientifique, Revue des Sciences Medicales, Revue d'Hygiene, Revue für Thierheilkunde und Thierzucht, Repertorium der Thierheilkunde, Annales de Belgique, Archives Veterinaire, Presse Veterinaire, Recueil de Medicine Veterinaire, Clinica Veterinaria, Veterinary Journal, Veterinarian.

HOME.—Druggists' Circular, Scientific American, Live Stock Journal, American Agriculturist, Country Gentleman, Breeders' Gazette, Spirit of the Times, Turf, Field and Farm, Medical Record, New York Medical Journal, Journal of Comparative Medicine and Surgery.

JOURNALS.—Maine Farmer, Farmer's Review, Chicago Times, Journal of Agriculture, Prairie Farmer, Ohio Farmer, Practical Farmer.

BOOKS AND PAMPHLETS.—R. Senola di Superiori di Medicine Veterinaria-di Milano, Heridity and Contagion on the Propagation of Tuberculosis, by Herr A. Lydtin, G. Fleming and M. Van Hertsen; Ueber Wesen und Behandlung des Sojen Hufkrebsis, by Dr. Putz; Texas Cattle Fever—Is it a Chimera or Reality, by D. E. Salmon D.V. M.; Microbes et Inoculation Virulentes, by M. Leblanc; Rapport Generale sus les Malades Contagieuses en 1883, by M. Leblanc; Bulletin Trimestriel International des Epsizooties, by C. Leblanc and P. Cagny; Etat Sanitaire des Animaux Domestiques en 1882, by Prof. W. E. Kenkel.

COMMUNICATIONS.—W. H. Pendry, J. Hopkins, J. F. Winchester, R. Huidekoper, Thomas Bland, J. Kemp, W. F. Fay.

AMERICAN VETERINARY REVIEW,

JUNE, 1884.

ORIGINAL ARTICLES.

CONTAGIOUS DISEASES OF ANIMALS IN THE UNITED STATES.

A Paper read at the Chicago Convention by Prof. J. LAW, F.R.C.V.S., of Cornell University.

(Continued from page 72.)

Measures for Suppression and Extinction.

In devising means for suppressing any plague we must give paramount attention to two great considerations: *First*, can we render the animal system *insusceptible* or *non-receptive* of the *poison*; and *Second*, can we *destroy every vestige of the poison*? No plague can be propagated in the absence of susceptible subjects. The lung plague virus is perfectly harmless to a community of horses, sheep or pigs. So it is to a great extent to cattle that have already been infected by it and have fully recovered from the disease. Just as a man does not readily contract small-pox a second time, so an ox does not usually suffer a second time from lung plague. I would not trouble you with this part of the subject, but that some advocate the restriction of this plague by producing this comparative insusceptibility in the animals exposed.

Methods of Seeking Insusceptibility.

This insusceptibility to lung plague may be secured more or less perfectly, by :

1st—*Keeping Insusceptible Breeds.*—Some breeds appear to be somewhat less susceptible to lung plague than others. In some this has been acquired by a long exposure of their ancestors to the plague, so that the more susceptible strains of blood have died out, leaving only those that have a greater power of resistance to this contagion. This is merely “the survival of the fittest.” In other cases cattle that are defective in muscular development, in loose connective tissue and in the lymphatic apparatus show a somewhat diminished susceptibility as compared with those of an opposite habit of body. But in neither of these cases is the susceptibility ever completely eradicated from the race or family. Each of these conditions will to a very slight extent reduce the losses, but neither separately nor together can they arrest the propagation of the poison, nor prevent the progress of the disease. They are, therefore, only to be sought on the unfenced pasture ranges, covered with cattle, where the permanence of the disease is already assured, and where no hope of its extinction can be held out. In other circumstances we can do incomparably better.

2d—*Passing the young through the disease.*—In badly infected districts shrewd dairymen have profitably resorted to the exposure of calves to the infection, realizing that the pecuniary loss through the death of the individual animal at this age was small, while the survivors could afterwards be exposed to infection with impunity.

3d—*Inoculation with the fresh virus from the diseased lung.*—A more economical method is the inoculation of the susceptible cattle in the tail, so as to exhaust the susceptibility. This, when properly managed, does not cause a loss of more than one or two per cent., and the survivors acquire as perfect an immunity as vaccinated people have from small-pox. This inoculation is extensively practiced in Belgium and France, is obligatory in Holland, and is almost universal in Australia, New Zealand, Tasmania, South Africa and in certain parts of Great Britain and America. It has greatly diminished the losses in these countries, but in no one of them has it put an end to the plague. In the city of Edinburgh, where it is supplemented by the

slaughter of the sick, and where it was loudly claimed that it had extinguished the plague, I found in my recent visit that the abattoir was presenting frequent examples of lungs from city dairy cows with the characteristic lesions of lung plague. In Holland, where the compulsory inoculation is also supplemented by slaughter, the fat cattle from the great feeding stables frequently furnish, when killed, the unmistakable lesions of the same disease. Nor is this at all surprising. The inoculated poison propagated in the tissues of the tail protects the individual system, but also secures the multiplication of the germs and their preservation in the stables, so that when an animal freshly introduced and inoculated fails to take, and to be protected, it has every opportunity of contracting the disease, in the ordinary way, in the lungs. The same results obtain where inoculation is practised on a large scale upon cattle exposed in open pasturages. Mr. Watson states as his experience in Australia and New Zealand that on the occasions when large herds of thousands and tens of thousands had been inoculated, a certain number of animals always failed to be brought in, and among these uninoculated animals there was in every case a very heavy percentage of loss after they had mingled with the inoculated. Mr. Corbet gives the same testimony concerning his experience in Natal. "The disease," he says, "is always lurking about, and introduced to a greater or less extent each time of inoculation." This is the greatest objection to inoculation as usually practised. It is a means of multiplying the disease germs, and while it protects the inoculated animal it furnishes material for the infection of every susceptible animal that may be brought into contact with it, or with the premises where it has been. Inoculation is admissible as a means of self-protection by the individual owner, in cases where the Government or local authorities take no efficient steps for the stamping out of the disease, but it is bad policy when our object is the complete extinction of the malady, and when we are adopting other measures well calculated to secure this end. One thought more on this subject. From herds in which inoculation is permitted, no animal should be allowed to pass our condemnation except to immediate slaughter.

The premises become infected, and the animals may carry the infection on the surfaces of their bodies as well as in the lungs.

4th—*Inoculation with Weakened Virus.*—The application of the method of Pasteur, of inoculation with attenuated virus, is advocated by some, but it is liable to all the objections urged against the simple inoculation. The attenuated virus is weakened, not sterilized; the germs continue to propagate the kind, and as their virulence has been lessened by culture under certain conditions, it follows that it may be again increased under conditions of an opposite kind. All measures which owe their efficacy to the propagation of the disease-germ which we seek to destroy, are to be deprecated, where more judicious measures of extinction can be adopted.

5th—*Inoculation with Sterilized Virus.*—Two years ago I was led by my study of the manifestations of lung plague in the system to suspect that the immunity after a first attack of lung plague was acquired, not by contact of the living germ with the lung tissue, but by its chemical products or excretions. I accordingly took measures to kill the germ without altering the chemical conditions of the virulent fluid, and inoculated the sterilized liquid on the susceptible animal. In the animals into which this liquid was injected there occurred no local swelling such as results from the inoculation with the living germs, and no one of these animals had local swellings when afterward inoculated with fresh virus containing living germs, nor had any lung plague, when exposed for six months in infected herds and premises. On every occasion, when isolated, the animals thus protected by inoculation with fresh virus, I took the precaution of inoculating at the same time an unprotected subject, and in every such animal the disease appeared in a characteristic form and, when the inoculation had been made in the soft loose tissues of the flank, in a fatal one. I have since learned by experiments on animals that had stood some time in infected buildings, that this inoculation with sterilized lymph is not protective of animals that have already taken the germs into their lungs. To be effective it must be practiced on cattle before they have been exposed to contagion, and its efficiency will be enhanced by a repetition after an interval of a week or longer.

This method, it will be observed, obviates the main objections to the ordinary inoculation. By it there is no germ introduced into the animal system, nor any laid up in the buildings where the inoculated beasts are kept. The method therefore may safely be applied to one of a score or a hundred susceptible cattle without endangering the rest, and the building where a thousand cattle have been operated on in this way may be at once filled with as many more fresh and susceptible animals without disinfection, yet without any danger of evil consequences.

The method is therefore incomparably superior to any other that has been hitherto employed, and in special cases may be resorted to with excellent results. The objections to its exclusive use are those that apply to all measures that come short of a speedy extinction of the disease: 1st. The keeping of diseased animals for the production of the virus is not without its dangers. 2d. The application of the method over a wide district is necessarily slow. 3d. Its application to districts extending over six different States would entail a vast amount of machinery, and the perfection of the work would suffer in various ways; operators would fail for lack of care or ability: cattle would escape notice and afterward fall victims to disease, and the incessant additions of susceptible animals by birth and otherwise would present a serious difficulty. 4th. To operate on animals most satisfactorily it must be done before they have entered the infected herd, and this would necessitate places of detention for such store animals outside the infected districts and a considerable additional delay and outlay in the traffic. 5th. The expense for all this machinery would be largely prohibitory of the practice. 6th. Finally, we cannot expect of this, any more than of any other inoculation, that it will prove absolutely protective in every case. We meet with second attacks of small-pox, measles and even of lung plague. We cannot therefore hope that we can altogether protect such exceptional animals as have a great inherent susceptibility to the lung plague. These exceptional cases forbid that we should adopt this as an exclusive method when we can resort to one which is absolutely certain in its results. This method may be of the greatest value for the protection of individual herds where

there is no governmental measure for stamping out, and it may be conjoined with the ordinary methods of extinction by slaughter without the danger of propagating the disease which always attaches to ordinary inoculation. But with all the many advantages which I see in this my own system, I am convinced that the Government can do incomparably better if it will.

6th. *Preventive Medication*.—In my experience of this disease in Scotland, over 20 years ago, I found that a long course of certain tonics, and notably of the preparations of iron, fortified the system so that few animals fell victims to the contagion. But in this, as in the two methods named, the result is imperfect and the subjects soon reacquire the susceptibility after the tonic has been withdrawn.

Destruction of the Poison.

1st. *By disinfection of the air breathed*.—In many instances of infected herds I have found that a thorough fumigation with sulphur fumes for half an hour at a time, twice or, better, three times a day, has at once put a stop to the further extension of the infection. The cattle already infected would still suffer; but for the others the poison was destroyed soon after it entered the air-passages and before it could make its way into the tissues, and no disease resulted. Like the other methods named, this has its drawbacks. It requires suitable buildings and careful manipulation to secure a sufficient effect without danger to the animals, and as such frequent application is requisite it must be left in the hands of attendants, who cannot always be relied on to carry it out safely and effectively.

2d. *By Isolation, Slaughter and Disinfection*.—Wherever the movement and intermingling of cattle can be prevented or sufficiently controlled, the method of suppression by isolation, slaughter and disinfection has ever been attended with the most perfect success. It has been insufficient in countries like Australia, where endless herds of cattle roam over the fenceless plains; but wherever lands could be enclosed and movement could be arrested or controlled, as in Norway, Sweden, Denmark, Holstein, Oldenburg, Switzerland and Massachusetts, it

has resulted in the complete eradication of the malady. In New York, in 1879, the same measures rooted out the disease from four of the eight infected counties, and restricted it to eight herds, which were preserved for lack of funds in two more of the counties, while in Kings County and the adjacent parts of Queens, where local authorities had successfully opposed our work, the malady remained widely prevalent. While advocating the full efficacy of this method, it is unnecessary to go into minor particulars further than to say that no additions from the public market should be allowed to herds in infected districts, nor except by natural increase or by special permit, from healthy districts, or through close markets which receive stock from such healthy districts only; that every death in a herd in such proclaimed infected districts should be promptly reported, and the carcase examined by a veterinary inspector; that no cattle should be moved from such herds in infected districts except to immediate slaughter, where examination of the carcase can be made by a veterinary inspector; or such movement should only be allowed after the herd and district have been certified by the inspector to have been sound and without dangerous additions for six months; that all infected animals, or far better, every infected herd should be promptly slaughtered; and that a thorough disinfection should be made of all premises when diseased animals or their fresh products had been.

I have always held that the only sound and just method of dealing with this disease must be directed and sustained by the National Government. I quote from my monograph on the lung plague, published in 1879.

“The plague threatens to reach our southern and western ranges, whence it will be as impossible to eradicate it as from the Russian steppes, Australia and South Africa, and from which continuous accessions of infection will be thrown upon our Middle and Eastern States, and shall we hesitate to call upon the National Government to interfere? This is a question of incomparably more moment to the western and middle States than to Delaware, Maryland or Virginia. To throw the burden of the extinction of this disease on these States is as impolitic as it is

unjust. If ever there was a question which in its future bearing affected the United States as a whole it is this.

“It would be highly appropriate that the agriculturists of the different States, Western and Southern, as well as Eastern, should petition Congress to take this matter up and adopt such measures as would forever rid our country of this most insidious of all animal plagues. At all hazards the work ought to be done and that speedily. If State rights stand in the way, let the money at least be supplied, as it rightfully ought, from the National exchequer, and applied by the different States through their own officials under the supervision of some responsible department—say the Agricultural Bureau, a Live Stock Disease Commission, the National Board of Health, or even the Treasury Department. It is folly and worse to quarrel about the means until the plague shall have passed beyond control. Action is wanted, of a prompt and decisive nature, by the General Government or with its assistance, and those who are most deeply interested in the subject should press this upon the Government until such action shall have been secured.”

THE PLAGUE IN KANSAS.

REPORT OF THE VETERINARIAN OF THE UNITED STATES AGRICULTURAL DEPARTMENT.

(From the Northwestern Live Stock Journal.)

Prof. Salmon, the veterinarian of the Department of Agriculture, has submitted his official report in regard to the disease from which cattle have recently suffered in various parts of the West. He says that the cattle disease in Kansas, which has attracted so much attention from its supposed identity with the contagious foot and mouth disease of Europe, was first noticed last December in a herd located four miles northwest of Neosho. On March 13th there were 118 head of cattle on the farm where the disease had appeared, and 74 were more or less affected—nine animals had one foot off, four had two feet off, three others were affected in but one, six in two feet and one in three feet. This disease spread to adjoining farms very rapidly.

Prof. Salmon submits elaborate details of all the facts connected with the various phases of the disease in various parts of Kansas, and in the vicinity of Kirksville, Adair County, Mo. He then says:

CONDITION OF THE CATTLE.

“All the diseased animals on the farms visited by me were stock cattle in medium to thin condition. On each of the farms there were animals of all ages. The calves and yearlings seemed to escape in a greater degree than the older cattle. The winter has undoubtedly been a severe one upon the stock of the western States, and the cattle were consequently somewhat below the average condition at this season of the year. The appearance of the disease cannot be explained by this fact, however, since thousands of healthy herds were in worse condition than those on the farms in question. Some of these herds were in better than an average condition. They had evidently been well fed and cared for. There was nothing in the surroundings of the affected animals which would explain the development of the disease. The feeding lots in most cases were unusually dry, and the disease had appeared at a time when all mud was frozen solid. The soil did not contain enough alkali even at Neosho Falls to make it at all probable that this could have been the exciting cause of the disease. As is usual in the management of cattle in the West, the herds are without shelter. As the animals first became lame it was supposed that mud had collected between the toes, and becoming hard was producing irritation. The animals were caught and their feet cleaned, but this had no effect upon the development of the disease.

“The foot and mouth disease of Europe is a specific fever, which only arises by contagion from other diseased animals. In the whole history of America there have been no spontaneous outbreaks of this disease, and in Europe the conviction is growing stronger every year that it has no other cause than contagion. We may accept it as a fact that the foot and mouth disease cannot occur in the United States except from the introduction of virus from abroad. When a disease having some resemblance in

its symptoms to foot and mouth disease is found in the interior of our country, more than a thousand miles from the ports where the contagion must necessarily be introduced, it becomes a matter worthy of the most careful consideration to determine whether there was any means by which this contagion could have been transported to the affected herd. In the present instance the animals of the affected herds have been purchased or raised in the neighborhood. No foreign animals or people have been upon the farm. When the first attack occurred, foreign cattle had for a long time been quarantined at the seaboard to make it impossible that this disease could have been carried in this way to the west.

WHERE DID IT COME FROM?

“It is almost impossible to find any means by which a foreign contagion could have been introduced. This important indication seems to have been greatly neglected in deciding upon the disease in Kansas. The foot and mouth disease is one of the most active contagions known. The period which elapses between exposure to the virus and the appearance of the first symptoms of the disease is as a rule but two or three days. A very large portion of the exposed animals become diseased, and the plague rapidly spreads from farm to farm. As a result of these characteristics, within a week after the introduction, nearly every animal in the herd shows unmistakable evidence of having contracted it. A very small proportion of the animals may resist the contagion, but the proportion is much less than with most other contagious diseases, and is so small that it does not affect the rule just mentioned.

“The disease at Neosho Falls showed very different characteristics from these. Goodrich’s herd suffered in the largest proportion, 65 out of 98, or 68 per cent. being affected. The first case here occurred January 10th, and no others until February 15th, or more than a month later. After this, new cases continued to develop for two or three weeks, but in a lot adjoining that in which the sick cattle were placed, there were twenty calves which remained entirely free from the disease. The isolation of these

calves was not sufficient to hold the foot and mouth disease for a single day, and it was even said the sick cattle had been driven through the calf lot to water.

“At Pribenow’s only eight per cent. of the animals had been attacked, and among a lot of 54 yearlings running with the other cattle there was not one case of disease.

“At Beard’s, in a herd of 75 the first animal was lame a week before the second was affected, and then another week passed before the others showed any symptoms. Here only six per cent. of the cattle on the farm were attacked.

SOME OF THE SYMPTOMS.

“The disease at Neosho Falls therefore did not resemble the foot and mouth disease, either in the proportion of the animals attacked or in its rate of extension, or in attacking other species of animals than cattle. If foot and mouth disease had been introduced into the heart of the country in any of the extraordinary ways which were offered to explain its appearance, we surely cannot conceive of its being brought to many widely separated herds at about the same time, especially where there has been no communication between these herds. The symptoms of foot and mouth disease are constitutional and local. The constitutional symptoms are loss of appetite, elevation of temperature, and other signs peculiar to fevers. The local symptoms consist in an eruption of blisters in the mouth, between the toes, about the coronet, and on the udder and teats. In the foot and mouth disease there is usually a very marked increase of temperature, reaching from 104 to 107 degrees. At Neosho Falls the temperature as a rule did not exceed what might reasonably be expected in health. In the foot and mouth disease there is loss of appetite and difficulty of swallowing, but here the universal testimony was that the appetite had remained good throughout, and there was no trouble in mastication or swallowing.

“In the foot and mouth disease there is an eruption of blisters on the mucus membrane of the lips, gums, tongue and palate, which are numerous and painful. It is almost impossible for animals in this condition to eat hay or other dry food, and it is

necessary to support them with gruel. Such animals stand smacking their lips, grinding the teeth and slobbering profusely. In Kansas the mouth symptoms were much less intense than this; some of the mouths presented erosions which were mostly small and very superficial. In Missouri some of the cattle had their mouths involved to a greater degree than any I saw in Kansas, but others with equally bad feet had perfectly sound mouths. Here I saw pieces of the mucus membrane becoming detached, but no blisters.

“The interdigital spaces and the coronet are the seat of eruption in foot and mouth disease; not only is there redness, heat and swelling on those parts, but there is a formation of blisters, and a liquid secretion from the whole affected surface of the skin. Sometimes abscesses form beneath the horn, from which the pus may burrow and cause the loss of the hoofs, or even affect the ligaments and joints, but severe complications in the region of the foot do not occur, except from this cause. With the cattle which I visited the feet presented a very different appearance. The complete death of the foot to the fetlock, or even higher, as occurred in all the worst cases in the West, is altogether unheard of in the foot and mouth disease. In only one case that I have heard of in the West was there any appearance of an eruption of the udder of the affected cow. An eruption of blisters on the udder is an extremely common occurrence in the foot and mouth disease.

“The disease which I investigated had few if any characteristics of foot and mouth disease. Among the whole number there was not a single animal which presented the typical characteristics of this plague. There did not even appear to be a single animal which represented even the typical mouth symptoms or the typical feet symptoms of that disease. There is but one cause known to veterinary science which is capable of producing the condition of limbs which we saw in many of the diseased animals in Kansas and Missouri, and that is ergot. The peculiarities of the disease led me to examine the feed, to learn if any unusual quantity of ergot could be found. The result of this examination was to show that at every one of the farms where the diseased cattle

were located hay had been fed which contained a considerable proportion of wild rye ergotized to an extreme degree. It is very probable that the cold weather had a considerable influence in developing the effects of the ergot. Many cases occurred soon after a severe ice-storm or sleet, and with the appearance of milder weather new cases ceased to appear, although the same hay was still being fed. The two or three cases in Missouri are an exception to this statement.

ERGOTISM.

“In conclusion, I would state that I have no doubt that the cases which I investigated, and the similar cases which occurred about the same time in other territories, were cases of ergotism. Prof. Stalker, of the Iowa University, and Prof. Faville, of the Colorado Agricultural College, have seen similar cases in their respective States, and concur in the opinion that they are due to poisoning from ergot.”

ALUMNI ASSOCIATION OF THE A. V. C.—ITS HISTORY.

W. H. HOSKINS, D.V.S.

A Paper read at the Alumni Meeting, February, 1884.

Gentlemen of the Faculty and Fellow Graduates:

Scarce ten years have passed since the noble efforts of a few unselfish and self-sacrificing men, amid indifference and deep-cutting criticism, that often was unjust in its source and fell heavily upon faithful and struggling workers, reared up in doubting but true hopes our alma mater, and in that short time it has become a pleasant duty for your fellow-member to write these lines of history of her graduates. Her birth foreshadowed a new era in the history of veterinary medicine and surgery in America, much of which has come to pass, and the future is as full of good promise as it well could be. Her aims and purposes were right, and she has lived in noble grandeur through some of the most trying periods that ever an institution witnessed. All honor to her faithful, zealous and sacrificing laborers, and may she long live after

them, a monument to their memories, for their faithful zeal, unselfish spirits and sacrificing hearts.

Ere I present you this history in detail, I would say that I have no apologies to make because it must come to you in a partial state of completion. For one full year I have labored with as indifferent and uninterested a body of fellow-graduates as almost any school could produce, and in no place, no State, no city, has it arisen to such sad proportions as in the home and birthplace of our noble school. Exhausting the powers of the post, the telephone and telegraph, and personal intercourse; using the parents, friends and guardians, and sometimes strangers to even my fellow-alumni, I feel that on my part nothing has been left undone, and I offer you in gladness and joy the fruits of my pleasant work.

It will be unnecessary here, among you all, to say that our alma mater's aim was good and true men—not many; and the results of her eight years' work are 110 graduates, gathered from seventeen States and territories and the West Indies. Her home and birthplace has well appreciated her ability in educating men for the profession, for she has sent 47 of this number, who have returned to her as workers in the old field but new work of veterinary medicine and surgery, especially the latter; for the former has long lived in a crude way among empirics, cow leeches and blacksmiths. Massachusetts comes next with 17, while the Keystone State follows as a good third with her 12; then comes that always-to-be-depended-upon State, New Jersey, with 11, while the remaining 23 are scattered from the rugged shores of Maine to the golden shores of California. Making a more concise geographical distribution, we find the Eastern States with 27, the Middle States with 73, while the Western sends us but 10 and the West Indies 3. Following up another enumeration, we find the class of '76 composed of 17; '77 with 4; '78 with 6; '79 with 8; '80 with 18; '81 with 18; '82 with 17; and '83 with 22.

A few of those who have entered the profession through our alma mater have turned their attention to other pursuits, so that what I may say hereafter must apply only to the workers in the science. With but few exceptions our men have been peculiarly successful and are enjoying lucrative practices, much personal re-

spect and broad recognition from intelligent and educated men. In many of the fields of labor where our men have penetrated, the increase in number and value of live stock has been rapid and large, showing, as there are scientific men to care for these fancy and high priced animals, so, in a similar ratio, has been the increase. The new social position accorded to our men has been gratifying, and their acknowledged worth and merit has given a new impetus to our progress. Others have gone into fields where no veterinarian had ever trod, but where intelligence prevails, and soon their people found much for them to do, and the lessened mortality, loss of usefulness, etc., that had before been experienced, now stimulated a large increase in numbers and value of stock used.

Of those from whom I have heard, they have held no less than forty positions of honor, trust or emolument pertaining to their profession. On commissions for examination into contagious diseases there have been eleven appointments from our number, and through their labors much valuable knowledge has been added to the history, nature, causes and course of the various contagious and infectious diseases that our country has had to deal with; alike, the saving of millions in a pecuniary sense; and preserves for us in foreign markets a place for our surplus productions. Two have filled positions on editorial staffs of prominent journals of our country, and thus served a daily usefulness in the spreading of veterinary talent as practitioners, and that, too, often among those who had never met or known competent veterinary service. But above all, and that which is the grandest point we all desire to gain, they gave unto the noble animals over which we exercise dominion relief from their sufferings, and checked the ravages of disease that soon would have made their lives miserable and painful; and who can measure the extent of their usefulness in stimulating new life and bringing new men into the profession through this medium.

Some have ably filled good positions in the surgical department of our College, and while gaining much knowledge for themselves, at the same time were able to facilitate the progress of those around them as students; and others have not forgotten their alma mater, but have come back from time to time to

give daily or weekly examinations into the progress of the classes, and to help those who were daily struggling with trying questions.

On State and city boards of health five graduates from this school have given efficient service, and their usefulness and worth in this regard has many times shown itself in remarkable proportions, and brought before the cities, States and nation the necessity of having such members on their staff. The outbreak of glanders in Newark, N. J., that so long existed as a calamitous danger to her people and the noble animals that must ever do man's bidding, was moved upon by one of our number, and to his vigilance and persistency, in that they have placed the disease under the most rigid control, much credit is due. Many such instances could be enumerated, alike the preservation of our infantile population from the dangers of tubercular and otherwise tainted food and milk. Their vast usefulness in this direction is a subject for much deliberation among us, and we should not wait for boards to call us to these positions, but we should constantly agitate among the people their necessity, and thus arouse them to demand such representation for their safety and welfare.

(To be continued.)

TORSION OF THE UTERUS IN A MARE—DEATH.

BY JOHN A. MYER, D.V.S.

I report a case which may be of interest to some of the readers of the REVIEW:

I was called to see a mare a short time since, reported to be pregnant and eleven months gone. History given, that she had been showing colicky pains at different times for about three days, though never failing to eat, and appeared to be in perfect health except when those pains would strike her, which were about as follows:

First day, she was being worked (as was the custom previous to that), and was unusually slow and soon attempted to lie down; the harness was removed, mare turned into a grass-field, laid down,

rolled a few times, got up and began to graze, and all seemed to be right for about three hours, when signs of uneasiness were again noticed; soon she laid down on her right side, looked around toward her flank and groaned a few times. This lasted for about five minutes, when she got up, began eating as before, thus passing the day with intervals of uneasiness as stated above.

Second day, could see no change, except about every two hours she was taken down similarly to day before.

Third day, the only change noticed was that the interval of quietude was still growing shorter and symptoms a little more urging. When I saw her at nine o'clock p. m., of the same day, she was in a large roomy stable, eating hay at the rack, and at first sight did not seem to be anything wrong. Examination showed temperature 101° , pulse 50 and strong, mammary glands hard and tense, general appearance very good.

.At this time she was again taken down. She showed no labor pains, but acted very much as if suffering from colic. Knowing that to be one of the sequels of pregnancy, gave prescription of opiates, directions to give as symptoms required, and to be fed mashy food. Told the owner to observe closely, as she might possibly have trouble at time of parturition.

Three days later I was again sent for, the owner stating that no *labor pains* had been noticed, but that she was still growing worse—quit eating. Examination revealed serious trouble. Temperature 103° , pulse 90 and very weak; hurried respiration, flanks tacked up, and in attempting to lie down did so with all the care possible. Mammæ soft and flabby; made a vaginal examination, hand passing very readily; found the os-uteri closed; by a little manipulation was able to dilate it sufficiently to allow the passage of my hand (at this time uterine contractions were noticed for the first time, though they were not very forcible;) passing along still further, my hand was stopped very abruptly, and in a few moments made a diagnosis of right torsion of the neck of the uterus. I gave an unfavorable prognosis; the animal was destroyed; my diagnosis confirmed by afternoon, which revealed a complete turn of the uterus on its axis, with extensive lesions of metro-peritonitis. The colt had evidently been dead for some

time, as the hair would come off readily ; foetus presented anteriorly, both fore legs flexed at knee joints, head and neck bent back and lay under the body of colt.

EDITORIAL.

SANITARY STATEMENTS.

We have several times referred our readers to an important resolution which was adopted by the Fourth International Veterinary Congress, at their session last year at Brussels. The subject of the resolution is one of very material interest, and concerns not only the people of Europe, but our own, in an equal if not a greater degree. We reprint the resolution :

“That between the various States which, by a regular repressive and preventive service, may furnish guarantees of a good Veterinary Sanitary Police, a Convention shall be established, having for its objects—First, to advise other States with as little delay as possible, of the appearance of typhus, pleuro-pneumonia, foot and mouth disease, small-pox, diseases of coit, glanders and farcy, scabies in sheep. Second—To publish a periodical sanitary bulletin upon these diseases, their extent, progress and termination ; which documents shall also be inserted in the international bulletin, if deemed advisable.....”

We are already in the receipt, from various parts of Europe, of bulletins of similar scope to those contemplated by the resolution, and shall lay them before our readers in a subsequent issue of the REVIEW as extensively as our limits will permit. Meanwhile, in order to comply with the suggestions of the resolution of the Congress, and to be able to reciprocate with our foreign colleagues the complimentary attention we have received, by the transmission of the interesting matter which has reached our hands, we propose to collect from every section of the country, or wherever our REVIEW circulates or is read, the statements and documents necessary to furnish an intelligible and thorough sanitary and professional index of the vital condition of our domestic animals, with reference to their sanitary status.

We inclose in the present issue a form of table which we trust all who cherish an interest in this very important subject, as well as those who ought to do so, whether private practitioners, veterinary surgeons possessing a large city and country practice, those who are attached to boards of health, State veterinarians and others, will regard as a personal appeal, and accept our remarks as conveying a professional and fraternal suggestion, which they will not fail to acknowledge with a prompt, available and practical response, such as it will be both a pleasure and a duty to return. We are, of course, not unaware that official, Governmental veterinarians will, probably, not be permitted to furnish us with what we desire. It is quite too much the custom in our land for lofty officials to withhold information of a professional nature, or if they consent to impart it, do so in a manner peculiar to themselves. But as the tables we propose may be filled by any veterinarian, a series of proximately accurate statements of facts may be, nevertheless, secured, which will furnish the public with statistics of the greatest value and interest.

The remarks and suggestions of friends and correspondents on this subject will be welcomed, and shall receive most respectful consideration at our hands.

REGISTER OF GRADUATES OF VETERINARY MEDICINE.

In this day of the unscrupulous assumption of titles and larceny of learned degrees, when any person so electing and desiring to deceive his neighbor may accomplish his purpose by placing after his name a row of initials purporting to be abbreviations of a medical title which he never possessed the right to appropriate, it is difficult for the public to determine between two claimants with the same title, which is the impostor and which the honest man—who is entitled and who is not to the V.S., V.M. or D.V.S. A claimant may perhaps have even matriculated at a veterinary college, but without having even attended a full course of lectures; or he may have been unfortunate (?) in his final examination. He may thus have been either unwilling or unable to complete

his studies, but nevertheless shrinks not from the determination to start in practice, and having issued his card and nailed up his shingle bearing the ordinary title of Doctor and the V.S., V.M., or D.V.S. following his name, goes forth to kill or cure, as the case may be, ostensibly, *secundem artem*.

To avoid, or at least as far as possible, to remedy this evil, we propose to publish the names of all graduates of veterinary medicine that we can discover, and give them to the readers of the REVIEW and to the public. We print, to-day, the correct register of the Alumni of the American Veterinary College, and hope that the Principals or Deans of all the other veterinary schools of this continent will favor us with a complete list of their own graduates. Other members of the profession, graduates of European schools, who will favor us with their names, addresses, date of graduation, and name of their alma mater, will also receive at our hands the same merited publicity. We hope, by this method, to be able to present the public at large a list as nearly correct as possible of the names and addresses of the regular graduates of veterinary medicine in the country, and if any important or considerable omissions occur, it will be obviously attributable to the indifference or oversight of those who fail to report, rather than to remissions or indifference on our part.

AGERSBORG, GABRIEL SMITH, 1882.....	Vermillion, Dakota Ter.
ALDERMAN, HARRY L. 1883.....	East Lexington, Mass.
ALLEN, FRANCOIS S., 1884.....	Medfield, Mass.
ARROWSMITH, WILLIAM HENRY, 1883.....	Jersey City, N. J.
ATWOOD, HORACE W., 1882.....	Brockton, Mass.
AUTENREITH, JOSEPH FERDINAND, 1882.....	Jersey City Heights, N. J.
BAILEY, GEORGE H., 1880.....	Portland, Me.
BATH, HENRY WILLIAM, 1883.....	Staten Island, N. Y.
BELL, LUCIEN T., M.D., V.S., 1876.....	Brooklyn, N. Y.
BLAKELEY, ROBERT P., V.S., 1876.....	Syracuse, N. Y.
BOYD, HENRY B. 1880.....	New Rochelle, N. Y.
BRETHERTON, W. C., 1883.....	New York, N. Y.
BRUNN, ARMIN E., D.V.S., 1884.....	Brooklyn, N. Y.
BUNKER, MADISON, 1881.....	Newton, Mass.
BURDEN, CHARLES, V.S., 1876.....	New York, N. Y.
BURGET, EUGENE, 1883.....	New York, N. Y.
BURT, WALTER L., 1881.....	Providence, R. I.
CAMPBELL, LEMUEL C., 1883.....	Philadelphia, Pa.

*CARMAN, AUGUSTUS D., 1879.....	Brooklyn, N. Y.
CATTANACH, CHARLES C., 1879.....	New York, N. Y.
COATES, WILLIAM J., M.D., 1877.....	New York, N. Y.
COCHRAN, DAVID W., 1880.....	New York, N. Y.
CORLIES, JAMES C., 1876.....	Newark, N. J.
COSGROVE, JOHN B., V.S., 1876.....	Worcester, Mass.
*COWHEY, THOMAS C., 1780	St. Louis, Mo.
CRANE, LEMUEL M., 1881.....	New York, N. Y.
CRITCHERSON, WILLIAM DANA, 1883.....	Norwich, Conn.
DROWLEY, CHARLES W., 1876.....	St. Louis, Mo.
DENSLOW, IRVING S., 1883.....	New York, N. Y.
DEVOE, WILLIAM STOUGHTON, 1881.....	New York, N. Y.
DIXON, DAVID J., 1881.....	Hoboken, N. J.
DOUGHERTY, JOHN, 1881.....	New York, N. Y.
DOUGHERTY, WILLIAM, V.S., 1876.....	Baltimore, Md.
DUANE, JOHN JR., 1881.....	New York, N. Y.
EVANS, CHRISTMAS 1883.....	Racine, Wis.
FIELD, SAMUEL S., 1878	New York, N. Y.
FOOTE, J. HURBERT, M.D., 1880.....	New York, N. Y.
FORCE, JULIUS C., 1878.....	Newark, N. J.
GAENTNER, CHARLES C., 1881.....	Bryn Mawr, Pa.
GALBRAITH, A. D., 1884.....	Greensburg, Ind.
GARDNER, JULIUS EDWARD, 1883.....	Greenfield, Mass.
GERTH, JULIUS, JR., 1880	Newark, N. J.
GILBERT, ELWOOD G., 1884.....	Riegelsville, Pa.
GRIBBLE, WILLIAM H., D.V.S., 1884.....	Churchville, N. Y.
HALL, CHARLES H., M.D., 1876.....	Cambridgeport, Mass.
HALL, RALPH W., 1880.....	New York, N. Y.
HAMLIN, JOHN, D.V.S., 1884.....	Afton, N. Y.
HANSHEW, ELISHA, JR., 1880.....	Brooklyn, N. Y.
HANSHEW, FRANKLIN JOSEPH, 1883.....	Brooklyn, N. Y.
HARRISON, ROBERT, 1881.....	Boston, Mass.
HELME, ARTHUR H., 1884.....	Miller's Place, (L. I.) N. Y.
HERR, THOMAS J., 1879.....	New York, N. Y.
HODGSON, JOSEPH R., 1883.....	Brooklyn, N. Y.
HOLCOMBE, A. A., 1876.....	Fort Leavenworth, Kan.
HOLLINGWORTH, WALTER G., 1884.	Utica, N. Y.
HOPKINS, JAMES, D.V.S., 1876.....	Cheyenne, Wyo.
HORNBLOWER, WALTER H., 1880.	Brooklyn, N. Y.
HOSKINS, W. HORAOE, 1881.....	Philadelphia, Pa.
HOUGHTON, GEORGE SHERBROOKE, 1882.....	New York, N. Y.
HOWARD, LESTER HERD, 1882.....	Boston, Mass.
HUNTINGTON, FRED. WILLIS, 1883.....	Woodford, Me.
JACKSON, OSOAR C., 1880.....	Jamaica, (L. I.) N. Y.
JEANIN, AUGUST JOSEPH, 1882.....	Nevarre, Ohio.
JOHNSON, SAMUEL K., 1883.....	New York, N. Y.

*Deceased.

KAIN, FRANKLIN MAY, 1883.....	York, Pa.
KAY, RICHARD, 1883.....	New York, N. Y.
KEEFER, GEORGE HENRY, M. D., 1882	Hillsdale, Mich.
KEMP, JAMES SAMUEL, JR., 1882.....	New York, N. Y.
KLEINDORF, WILLIAM H., 1879.....	Middletown, Pa.
KNOWL, MORTON E., 1884.....	Clinton, Ind.
KROWL, I. N., 1884.....	Uubany, Ohio.
LEIGHTON, JOHN ALBERT, 1882.....	New York, N. Y.
LEVI, EMIL S., 1880.....	Dubuque, Iowa.
LIGHT, DANIEL K., 1880.....	Palmyra, Pa.
LOBLEIN, ELDON, 1884.....	New Brunswick, N. J.
MANZ, WILLIAM, 1882.....	New York, N. Y.
MARTENET, WILLIAM HOWARD, 1882.....	Baltimore, Md.
MARTIN, ALFRED F., 1881.....	Zanesville, Ohio.
MATTISON, MAHLON G., 1880.....	Pittstown, N. J.
McKENZIE, ALEX., 1881.....	Cleveland, Ohio.
McLEAN, RODERICK A., 1879.....	Brooklyn, N. Y.
McNICOL, JAMES E., 1881.....	New York, N. Y.
MEROER, ELMORE R., 1881.....	Bermuda, W. I.
MICHENER, CHARLES B., V.S., 1876.....	New York, N. Y.
MILLER, WILLIAM B. E., 1879.....	Camden, N. J.
MORSE, ARTHUR B., 1883.....	Des Moines, Iowa.
MOULTON, CHARLES LEROY, 1882.....	Fort Reno, Ind. Ter.
MURRAY, JOHN J., 1881.....	New York, N. Y.
MYERS, JOHN ALLEBAUGH, 1883.....	Linville, Va.
MYERS, JOHN C., JR., M.D., V.S., 1876.....	Cincinnati, Ohio.
*NOSTRAND, PETER, V.S., 1876.....	New York, N. Y.
NOYES, WILLIAM B. C., 1883.	Roxbury, Mass.
OTTO, MARTIN J., 1884.....	New York, N. Y.
OUTERBRIDGE, THEODORE, V.S., 1876.....	Bermuda, W. I.
PARSONS, FRANK H., 1881.....	Rochester, N. Y.
PEABODY, CHARLES H., 1877	Providence, R. I.
PENNIMAN, GEORGE B., 1877.....	Worcester, Mass.
PENDRY, WILLIAM HAMILTON, 1883.....	Brooklyn, N. Y.
PETERS, AUSTIN, B.S., 1883	Boston, Mass.
PIEROE, MATTHEW A., 1884.....	Paterson, N. J.
RISLEY, FRANK, 1882.....	Waterville, N. Y.
ROBERTSON, JAMES L., M.D., V.S., 1876.....	New York, N. Y.
ROBERGE, FRANKLIN F., 1880.....	New York, N. Y.
ROGERS, THOMAS B., 1879.....	Westville, N. J.
ROSE, ALVORD H., 1878.....	Staten Island, N. Y.
ROSE, WILLIAM H. 1880.....	Washington, D. C.
ROSS, EDWARD C., 1884.....	New Haven, Ct.
ROWLAND, EVERETT WOODHULL, 1882.....	Monroe, Wis.
ROWLAND, WARD BEECHER, 1882.....	Wilmington, Del.
RYDER, J. ELMER, 1884.....	Jamaica, (L. I.) N. Y.

*Deceased.

RYDER, JAMES F., 1883.....	Rondout, N. Y.
SAUNDERS, FRED., 1882	Lynn, Mass.
SAUNDERS, JOHN S., 1876.....	Boston, Mass.
SCHMIDT, WILLIAM G., 1878.....	Newark, N. J.
SHERMAN, WALTER A., 1881.....	Lowell, Mass.
SNYDER, ORVINI W., 1884.....	Lena, Ills.
SMITH, JOHN J., 1879.....	Chambersburg, Pa.
SPRANKLIN, F. W., 1884.....	Baltimore, Md.
*STOOKER, CHARLES V., V.S., 1876.....	Salem, Mass.
SFOUTE, RICHARD A., D.V.S., 1884.....	Barbadoes, West Indies.
*TRAVER, ERNST, V.S., 1876.....	Jobstown, N. Y.
TRAVER, FRANK, 1882.....	Altoona, Pa.
VALERIUS, NICHOLAS PIERCE, 1884.....	Fort Atkinson, Wis.
VOGT, ANDREW G., 1884.....	Newark, N. J.
VREELAND, HAMILTON, 1884.....	Asbury Park, N. J.
TOURTELOTTE, LINCOLN H., 1881.....	Idaho Springs, Colo.
WALTON, SHARPLESS M., 1881.....	Avondale, Pa.
WEEKS, ARTHUR P., 1880.....	Paterson, N. J.
WHITE, THOMAS ELDER, 1884.....	Lamonte, Mo.
WINCHESTER, JOHN T., B.S., 1878.....	Lawrence, Mass.
*WING, EDGAR R., 1880.....	Needham, Mass.
WRAY, WILLIAM H., 1878.....	Yonkers, N. Y.
ZUILL, WILLIAM L., 1880.....	Philadelphia, Pa.

PHENIC ACID AND ITS PREPARATIONS IN VETERINARY MEDICINE.

Since the introduction of the antiseptic treatment of wounds by the method of Lister, the carbolic acid dressing has found its way, to a greater or less degree, from the domain of human into that of veterinary surgery, and though a thorough Lister dressing may be found difficult of application upon our domestic animals, many veterinarians are flattering themselves with the persuasion that they have obtained excellent results from its adoption. With the successes, however, must be associated many failures, which must be taken into the account as counterbalancing the advantages secured.

To what cause these failures are to be attributed is a question involving more or less difficulty in its answer.

From remarks occurring in the papers which treat of human medication, it would seem evident that one of the principal causes

*Deceased.

of disappointment has been found in the alleged or suspected impure condition of the particular preparation which has been used, and it has been claimed that the employment of pure carbolic acid, or the phenic acid proper, would not have been so frequently followed by bad results.

As an established fact, phenic acid, (prepared by the process of its discoverer, Dr. Declat), has now taken a high place among the adjuncts of both human and veterinary surgery; and our conclusions from the few experiments which we have personally made, have been of a highly satisfactory character, inasmuch as they have fixed in our judgment the conviction that it offers to the veterinarian an agent, of great excellence and efficiency, for the dressing of wounds in the true antiseptic manner.

Besides the solution of pure phenic acid which we have ourselves employed, we have dressed many wounds with iodo-phenol—a preparation of iodine and phenic acid in combination—and with this have obtained, in the treatment of cartilaginous quittor, results which, if they should multiply by repetition, would to a great extent relieve us of the necessity of the surgical operation familiar to all of us.

The report of two serious cases of the disease mentioned, thus treated, are given in our present issue, and will, we believe, largely encourage our colleagues to test this comparatively new preparation.

PHYSIOLOGICAL PATHOLOGY.

NEW EXPERIMENTS IN RABIES.

BY MESSRS. PASTEUR, CHAMBERLAND AND ROUX.

(Read before the Academiè des Sciences of Paris.)

(Continued from page 83.)

6th. In my preceding report on rabies, I stated that we had found cases of the disappearance of the first rabid symptoms with a reappearance of the disease in the same dog after a long interval. We have since noticed the existence of the same fact in rabbits, as in the following example: A rabbit, taken with rabid

paralysis thirteen days after trephining, recovered completely during the succeeding days. In forty-three days the paralysis reappeared, and death by rabies occurred on the forty-sixth day.

7th. These facts, however, are of very rare occurrence both in the rabbit and the dog. But we have found them taking place much more frequently in fowls, while either the death of the animals, of course, anticipated any possible return of the disease, or it failed to take place at all, as we have previously reported in respect to a dog, whose case was described in a former communication.

I may here remark that the hen, when affected with rabies, never shows very violent symptoms. The manifestations are merely dullness, anorexia, posterior paralysis, and often great anæmia, characterized by the pale coloration of the comb.

8th. We have watched very carefully for any facts which might be of value in confirming certain assertions recently made referring to a presumed attenuation of the rabid virus by the action of cold, as well as the pretended passage of rabies from the mother to the foetus, and although our observations on those two points have been much more numerous than those which have been relied upon to advance these theories, we have, so far, obtained none but entirely negative results.

9th. The certainty of the results of the inoculation of rabies by intravenous injection, sufficiently proves that the hypothesis of the passage of the virus from the periphery to the nervous centers through the nerves, cannot be accepted as describing the only method of propagation of the virus, and that, in at least a majority of cases, the absorption of the virus takes place through the circulatory system.

In any case, however, the theory is open to objection. For example: to inject the rabid virus into a vein, a traumatism is necessary; the skin must be divided and the vein exposed. May it not, then, be supposed that the virus introduced into the circulatory system, and returning to the wound, must come in contact there with nerves or open lymphatic vessels? The following experiment removes this objection at once. We have at various times inoculated the rabid virus into a vein of the ear, and then

immediately amputated that organ, with the thermo-cautery, below the point of inoculation, and in every instance rabies followed. Still, thermo-cauterization leaves no true wound; all the divided structure is burned.

I hasten these remarks in order to reach a part of the subject which most of all deserves our attention.

The Academy has not forgotten that the discovery of the attenuation of viruses, in connection with its applications, which have been employed for the prophylaxy of certain diseases, has thrown much light on this capital fact of the possible experimental production of various degrees of virulency for a single virus.

Rabies is pre-eminently a virulent disease, and the nature and effects of its virus are possessed with qualities so mysterious that the desire becomes natural and irresistible to ascertain whether the rabid virus may not also be capable of exhibiting various degrees of propagating power. Our experience now authorizes an affirmative answer to this question. Without referring to various methods which are still the subjects of study and experiment, we have found that rabid virus, passing through various species of animals, is more or less modified in its virulency. Rabbits, guinea pigs, fowls and monkeys are susceptible of rabies. When, by successive transfers, the virus has reached a certain point of fixity peculiar to each species, the virulent power of the matter is far from being the same in all, differing notably from that of the canine subject, the virulency of which has regulated itself by numerous transmissions from dogs to dogs, from time immemorial. Spontaneous rabies finds no place in my convictions.

We certainly have a virus which communicates rabies to the rabbit in seven or eight days, with such a degree of certainty that we are enabled by guess, so to speak, to name the duration of the incubation, determined by a change in the temperature or the appearance of the first external symptoms of the disease. We also have a rabid virus which communicates the disease to pigs in five or six days with no less certainty in respect to the duration of its incubation.

Before that point of fixity of which I have spoken has been reached in the various species of animals, each for itself, the

virulency is undergoing constant change. We believe that for one of the species, other things being equal, the virulency is in inverse proportion to the number of days of incubation, and that generally the proportions of the inoculated virus are as nearly equal as possible when a similar mode of inoculation has been practiced. In young animals the duration of incubation is usually somewhat less than in adults.

As we entirely ignore the conditions that the rabid virus of the dog would exhibit in the human organism after successive passages from man to man, we have been obliged to experiment with rabies passing from monkey to monkey. At a later date I hope to lay before you the results of this study, which are very interesting though incomplete.

I have already said that I have in my laboratory several dogs which are refractory to rabies, by all modes of inoculation. I may add, to-day, that they are also refractory to all descriptions of rabid virus. At the time of my last report upon rabies, however, we were obliged, on account of the imperfect condition of our observations at that time, to leave unanswered the question whether these dogs were naturally refractory to rabies, or only by some peculiar conditions resulting from the operations to which they had been previously subjected.

I now believe we can give a more accurate answer to this question, though it must still be with some reserve. I believe myself authorized to say that our dogs were not refractory to rabies by their natural constitution. We have, indeed, found the quite practicable way to obtain refractory dogs in as large number as one can wish. Still, in consideration of the possibly great duration of rabies, which at times throws some doubt upon the experiments of control, I beg the Academy to accept for some time this assertion, and allow me to simply state at present that the refractory condition is obtained by a system of inoculation of virus of various degrees. We have at present twenty-three dogs which may without danger receive any virulent inoculation.

To be able to render dogs refractory to rabies would not only be a solution of the question of the prophylaxy of this affection in that animal, but also in man, as man never contracts rabies ex-

cept from the bite of some animal whose virus is received directly or indirectly from the dog.

May not human medicine be able to take advantage of the lengthened incubative stage of rabies, to attempt to establish in that interval of time, before the appearance of the first rabid symptoms, the refractory condition of bitten individuals? But before this hope can be realized much remains to be done.

In beginning the study of rabies, my principal object was to search and prove, if possible, the power of experimentation in the knowledge of virulent or contagious diseases. The Academy has no doubt already observed that the preceding observations, as well as subsequent investigations, have been obtained without necessary recourse to the discussion of the question, or even the knowledge of the facts of the contagiousness of the disease.

AMERICAN VETERINARY COLLEGE—HOSPITAL RECORDS.

SIMPLE FRACTURE OF THE RADIUS.

BY J. E. RYDER, House Surgeon, A. V. C.

A sorrel gelding, ten years of age, was brought to the hospital on the 8th of April, with the following history: At about three o'clock P.M. of that day, while standing in the street, he became suddenly frightened, and while rearing fell heavily upon his near side on the curbstone. He was immediately unharnessed and allowed to get up, but upon standing was found very lame and unable to move. An ambulance was immediately summoned, and he was brought to the College.

Upon examination, the animal was found standing up, with his left leg in the normal position and without swelling, but betraying excessive pain on the slightest manipulation on the lower part of the radius. By careful handling crepitation was detected, and a diagnosis made of simple longitudinal fracture of the radius without displacement, the lower lesion extending upward along the length of the bone. Everything seemed so far favorable that a corresponding prognosis was given, and the owner being desirous of having the animal treated, a splint of plaster of

paris with long tick bandages was applied, supported by four steel splints, running upward in the long axis of the injured bone. He was then allowed to walk to his stall and placed in slings. The next day, everything being well in place, the apparatus was strengthened on the outside with three wound splints supporting the parts outward, inward and behind, they being kept in place by a snugly tied flannel bandage.

On the 10th he seemed to have severe lancinating pains, but everything otherwise appeared normal, including temperature, pulse, respiration and appetite.

The pain subsided during the following day.

After a week's treatment, however, the owner decided to give him up. He was allowed to remain in the stall up to the 28th of the month, when, preparatory to destroying him, he was walked into a box stall close to the operating room of the hospital, and let loose.

On the 1st of May it was noticed that a slight change had taken place in the off fore leg, consisting in an expansion of the tendons passing behind the knee of that extremity. It was manifest on account of the greater amount of weight of the body thrown upon that leg. This condition continued gradually to increase, until on the 5th of May the parts presented a very peculiar appearance: the knee was bent forward in such a manner that there was an extreme concavity of the line, normally vertical, of that joint. Indeed, a plumb line dropping from the point of the shoulder and passing about $5\frac{3}{4}$ inches in front of the toe, showed the carpus to be about $19\frac{1}{2}$ inches posterior to it. Such measurements can give an idea of the great change in the condition of the part and of the expansion of the tendons. The animal was then destroyed.

On post mortem it was found that in the off fore leg the tendons were stretched to the utmost, and were in a bruised and discolored condition, presenting, however, no laceration or separation in their continuity. In the near leg, the muscles surrounding the radius being removed, the partially united fracture was exposed. It extended from the lower to the upper third of the bone, in the direction of the long axis of the radius. Process of union had

already fairly started upon the front and posterior parts of the bone, but the lower extremity on its posterior face showed evidence of either a want of reparative process or of recent separation between the ends of the bone, which might have taken place when the animal was thrown down to be destroyed.

The interesting points of this case are seen in two important facts. The possibility of fair success in the treatment of simple longitudinal fracture of a long bone, a fact of which is already well established, is the first; and the second is the illustration of the necessity of keeping an animal under treatment in a similar case, in slings; not only to keep him quiet, but also to relieve him from carrying an excess of weight on the sound leg, an object which cannot be accomplished if, as some practitioners recommend, the animal is turned loose in a box stall.

RAPID RECOVERY OF TWO CASES OF CARTILAGINOUS QUITTOR BY ANTISEPTIC TREATMENT WITH IODO-PHENOL.

BY MR. NOCARD.

CASE No. 1.—A bay mare, six years of age, had been suffering with cartilaginous quittor for over six months, having on the near fore foot two large fistulous tracts, connected together, and running obliquely across the cartilage. The discharge was quite abundant, and the animal, who had been submitted to several forms of treatment, had become quite lame.

Before deciding to operate on her by the removal of the cartilage, it was suggested to try the antiseptic dressing with iodo-phenol.

On the 21st of March, the shoe being removed and the hair clipped short, the foot was thoroughly washed and soaked in a solution of carbolic solution, 1 in 40, and dressed as follows: The solution of iodo-phenol was injected several times into the fistulæ and a dressing of oakum saturated with carbolic solution applied. A piece of oil silk was applied, large enough to envelope the dressing, the whole being kept in place by a moderately tight bandage. Directions were given to soak the foot several times a day in carbolic solution.

The foot was dressed daily in the same manner until the 30th, when the fistulæ were found to be slowly closing and the discharge diminishing; and on the 8th of April, seventeen days from the beginning of the treatment, the mare was discharged. The wounds were almost entirely healed, and she was quite able to resume her work.

CASE 2.—Was a bay gelding, five years old. He had been under treatment for the last three months, and was discharged a week ago as cured, but became very lame the second day after he was shod. The part around the coronet of the near hind foot had become considerably swollen, an abscess had formed and ulcerated; and on the 27th of March he was brought to the hospital for advice and treatment.

When admitted he had a fistula about two inches in length, running obliquely downwards, on the cartilage, and opening on the side of a wound about one and a half inches in size, a short distance above the coronet.

The treatment decided upon was similar to that of Case No. 1, viz.: antiseptic washing and soaking in phenic solution, injection of iodo-phenol, carbolized oakum for dressing, the whole covered with oil silk, and protected with a snug, tight bandage.

This was renewed daily for a few days, when the parts seeming to improve so rapidly, and the wound having considerably healed, the fistulæ diminished and the lameness improved, the dressing was changed only every second, and soon, every third day. He was discharged on the 16th of April, radically cured, and has since been regularly at work.

EXTRACTS FROM FOREIGN JOURNALS.

CHEMICAL AND EXPERIMENTAL FACTS ILLUSTRATIVE OF THE HISTORY OF THE HEREDITY OF TUBERCULOSIS.

BY MESSRS. L. LANDOUZY AND H. MARTIN.

Many modern pathologists deny that persons are ever born tuberculous, but admit that one may be born *liable* to it; that what the child born of tuberculous parents inherits is not tuberculosis, but merely a predisposition to the development of tuber-

cles. They have experimented in order to discover whether a tuberculous germ does not pass in nature from the mother to the offspring, or to the placenta, in the same manner that chicken cholera and anthrax are transmitted, according to the teachings of Messrs. Arloing, Cornevin and others. The result of their observations is thus given: A woman in the advanced stage of phthisis, a few days before dying gave birth to a foetus of six-and-a-half months, who died the same day. A piece of the lung of this foetus, apparently healthy, was introduced with ordinary carefulness into the peritoneum of a guinea pig. Four and a half months later the animal died tuberculous. The same result was obtained with a five months foetus of another woman dying of phthisis. Pieces of lung and of placenta, and a portion of cardiac blood, in this case transmitted tuberculosis. The same result is obtained by the inoculation of tissues taken from the foetus of a healthy guinea pig, born from tuberculous parents.

Conclusions.—There exist in the young offspring of tuberculous individuals a latent period of tuberculosis, which for a period of one or two years leaves the subject free from morbid manifestations, the germ meanwhile preserving an existence in the tissues of the offspring, until its development is made manifest by an attack of tuberculous meningitis or broncho-pneumonia.

The maternal transmission being thus demonstrated, can the tuberculous father transmit the infection directly to the ova of the healthy mother, she, meanwhile, remaining healthy? Can the sperm of a tuberculous male transmit tuberculosis by direct inoculation?

The authors took from a guinea pig which had died from general tuberculization, but whose testicle was apparently healthy, some testicular pulp, and introduced it into the peritoneum of an adult guinea pig. Two months later this animal died spontaneously with generalized tuberculosis. But was it the blood, the lymphatic fluid or the sperm which contained and conveyed the germ? Two grammes of a mixture of salt water with the contents of the vesiculæ seminales of a tuberculous pig were injected into the peritoneum of another, three months later. This animal had generalized tuberculosis which could be transmitted.

The conclusion of the authors is, that besides the heredity of constitutional predisposition, acquired by the offspring from the parent, there is also the heredity of the seed transmitted from the parents to the child.—*Revue d'Hygiene*.

LACERATION OF THE SMALL COLON BY AN ÆGAGROPHILE.

BY MR. PALAT.

A mare aged eleven years was taken with light colic one morning. She had eaten her breakfast, and showed the presence of slight pains by pawing. An hour later she laid down, apparently quiet. Towards evening she stood up, head down, with weak pulse and somewhat tympanic, and as she was about to be punctured she fell down and some two hours later died.

At the post-mortem she was found in a fat condition. The peritoneal cavity, when opened, allowed the escape of a large quantity of gas, as usually occurs in cases of rupture of the stomach or of the intestines. The last condition was soon recognized by the foetal matters found floating in the cavity and near the pelvis, by the reddened and injected condition of the peritoneum, and the large effusion present. The small colon presented a laceration, with blackish and bloody edges. The mucous membrane was red, thickened and bloody. This perforation must have been made by a calculus or an agagrophile, which last was found. It was flattened in form and weighed 600 grammes. In examining the large colon, towards the right hypochondriac region, a large mass was felt, which seemed to close up the opening of the organ. On cutting down upon it another mass weighing four kilogrammes was removed. It was somewhat melon-shaped and slightly conical in form, with a large base. They were composed of vegetable threads and alimentary remains, mixed with calcareous and ammoniacal and magnesian salts.—*Recueil de Medecine Veterinaire*.

GLANDERS IN A DOG.

BY MR. MENARD.

A small Danish bitch, five years old, had fed on raw meat while at the breeding farm of the "Jardin d'Acclimatation," from

the 28th of August to the 10th of October, 1883. She returned to her kennel and was then fed with biscuit, bread and cooked meat. Towards January she was losing flesh and had several little sores on her back, but which were overlooked. In February she had another round wound, the size of a one-franc piece, on the right side over the ribs, and at last, on the 3d of March, she had another. None of these appeared to heal. The last was over the left ribs, round in form, and discharging a liquid, greyish pus. It was well defined, and of a diameter of two-and-a-half centimeters. There was no discharge and no enlargement of the maxillary glands.

It was then that the author thought of glanders, and her pus was inoculated to a guinea pig.

The author's conclusions are: 1st. If the disease was contracted while she was at the breeding farm, the period of incubation had been of more than two months' duration.

2d. It is the second case which proves the contagiousness of glanders by the injection of raw meat.

3d. In the dog glanders seems to have only a cutaneous manifestation.

4th. Glanders is transmissible by inoculation from the dog to the guinea pig.

THE FIRST CASE OF ACTINOMYCOSIS OBSERVED IN FRANCE.

BY MR. NOCARD.

This case is recorded in the transactions of the *Société Centrale de Médecine Veterinaire*. In reporting it, Prof. Nocard, alluding to the history of the disease and to the reports upon it which have recently appeared in all veterinary journals, observes that, so far, this is the first case reported in France. He attributes the absence of information on the subject in that country to the fact that the disease, being very slow in its development, and for that reason not interfering with the general use for meat of the animals, has not affected the interests of the owners, and the veterinarian for that reason has not yet been appealed to to investigate and remedy the evil.

This is so far true, he says, that during the fifteen years which he has been attached to the clinic of Alfort, he does not remember to have seen a single case brought to the consultation. Inquiries made by him of other veterinarians have failed to furnish him with indications of the frequency of the disease.—*Recueil de Medecine Veterinaire*.

PROPOSED PRESENTATION.

MEDAL TO H. BOULEY.

To commemorate the honor which Mr. H. Bouley has received in being called to the Presidency of the Academie des Sciences of Paris, the veterinary professors of France have started a subscription to have an artistic medal made, to be presented to this world-renowned veterinarian, and we have been requested by the committee who has charge of the movement to insert the enclosed circular. We do it with much pleasure and hope that some of our veterinarians will willingly join in the movement. The subscription is of sixteen francs (about \$4), and can be sent to us for remittance.

MONSIEUR ET CHER CONFRERE,

Le 26 janvier dernier, un banquet a été offert à M. H. BOULEY, sous la présidence de M. PASTEUR, pour célébrer l'honneur insigne que l'Académie des Sciences venait de faire à notre Maître, en le nommant son Président pour l'année 1885.

Cette manifestation ayant dû suivre de très près l'élection pour conserver son à-propos, le nombre de ceux qui ont pu y prendre part s'est trouvé forcément limité aux Professeurs de l'Ecole d'Alfort et aux Vétérinaires civils et militaires des trois départements de la Seine, Seine-et-Oise et Seine-et-Marne.

Avant de se séparer, les assistants à ce banquet ont exprimé le vœu unanime qu'une médaille commémorative perpétuât le souvenir de l'événement glorieux pour notre profession qui venait d'être fêté; et nous avons pensé que ce serait répondre au sentiment général de la grande famille vétérinaire que de convier tous ses Membres à se joindre à nous pour offrir au savant Maître, dont un grand nombre de nous sont les élèves, et dont, tous, nous nous honorons, un témoignage d'affectueux respect et de reconnaissance pour son œuvre scientifique et professionnelle.

Nous venons, en conséquence, cher Confrère, vous demander votre concours pour la réalisation du programme suivant :

1° Offrir à M. H. BOULEY une médaille, d'une grande valeur artistique, frappée à son effigie, et portant le millésime de l'année où les suffrages de

L'Académie des Sciences ont appelé au fauteuil de la présidence le représentant de la Science Vétérinaire dans cette grande Assemblée ;

2° Donner à chaque souscripteur une reproduction en bronze de cette médaille, gravée à son nom, et un exemplaire du compte rendu de la fête du 26 Janvier, avec la liste de tous nos adhérents.

Nous consacrerons ainsi et nous perpétuerons le souvenir d'un événement dont nous ressentons tous un légitime orgueil.

Veillez agréer, Monsieur et cher Confrère, l'assurance de nos meilleurs sentiments.

Les Membres du Comité d'organisation :

BARON, Professeur à l'Ecole d'Alfort.

BLANC, Vétérinaire à Paris.

CAPON, Vétérinaire principal de 1^{re} classe.

MOLLEREAU, Vétérinaire à Charenton.

WEBER, Vétérinaire à Paris.

To the Editor of the American Veterinary Review.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held in the lecture-room of the American Veterinary College, New York, on Tuesday evening, May 13th, 1884, President Dr. A. Liautard in the chair.

The members present were Drs. Robertson, Burden, Liautard, Coates, Foote, Field, Cochran, Johnson, Bretherton, Charum, Ryder and Allen, New York; Drs. L. McLean, Pendry, R. McLean and Newman, Brooklyn; Dr. Bath, Staten Island; Dr. Dixon, Hoboken; and Dr. Boyd, New Rochelle.

On motion, the reading of the minutes of the last meeting was laid over.

Dr. Field, the essayist of the evening, then read a lengthy paper on "Examination of Horses as to Soundness," which gave rise to a long discussion. The use of the clinical thermometer in examinations for soundness was strongly advocated, the essayist holding that where the temperature ran over 101°F. the examination, for the time being, should be postponed. In answer to Dr. L. McLean as to whether he would reject altogether if he found the temperature much increased, the essayist said, where he

found it over 101°F. he would want to be well satisfied as to the cause before passing. If it was up to, say, 104° F. without any apparent cause, he would have the animal put into a stall for two or three hours, and examine again, but if confined to the then present time, he would certainly not pass, as a temperature of that height indicated something wrong. Dr. R. McLean considered that considerable allowance ought to be made for excessive exercise. He had scarcely ever found the temperature below 101°F. in dealers' stables, and would not reject a horse who had a temperature of even 104°F. simply on that account. Dr. Robertson spoke of Dr. Dougherty, of Baltimore, having given this question considerable attention, he having found that after a hard gallop the temperature was very much increased, going as high as 104°F. Dr. R. McLean expressed his belief that that indicated a state of congestion. Dr. L. McLean did not agree with that, contending that there could be a temperature of 104°F. without any pathological lesions. The essayist disagreed with this, and stated he did not consider a horse should be examined for soundness just after he had had a hard gallop; and in answer to Dr. Bath, said we might consider the temperature normal if not over 101°F. Dr. Johnson, in speaking of exercise as one of the causes of elevation of temperature, stated he at one time took the temperature of thirty horses at night, just after they had finished their work, and found it ran from 102½°F. to 103½°F., and on taking it again in the morning, found them all normal. Dr. Burden expressed the opinion that when the temperature stood at 104°F. it indicated some disease. Dr. Charum took the same view. Dr. Coates was of the opinion that much depended upon whether the horse sweat freely or not. From those horses that did not he would expect to get a higher temperature than from those who did, and cited a case on record in human practice, where a temperature of 123°F. was discovered, without any disease being present or following.

Dr. Cochran raised the question whether the toes being turned in or out was sufficient to reject a horse that was being examined for soundness. He believed, himself, that it was. Dr. Field said he would qualify his certificate in either case. Dr.

L. McLean did not consider the turning of the toes, either one way or the other, of itself an abnormal condition. He had seen certificates of unsoundness on account of "knee-spring." The essayist said he would certainly reject where he found that was the case, holding it was due to contraction of the tendons.

The question of taking off the shoes, as practiced in England, to see if the horse had corns, was referred to by Dr. Robertson. Could we do this with dealers' horses? Dr. Pendry doubted if we could. Supposing the blacksmith who was called in to do this, in putting on the shoe again had the misfortune to prick the foot, would the dealer be willing to pay any expenses that might result? Where would the liability rest? Would the dealer or buyer run the risk? Would the examining surgeon or blacksmith be liable? Much would depend as to whether it was really necessary to take the shoes off. He held it was good practice to do so, but the question was, Was it really necessary? Dr. L. McLean made a practice of doing so, and considered it well worth the trouble. Dr. Coates contended it was not always necessary, as all horses with corns showed more or less lameness. Dr. Pendry could not agree with Dr. Coates, and spoke of a horse which he knew had corns, yet traveled sound. Dr. L. McLean asked if there was not a period of a corn where no lameness was shown. Dr. Coates admitted that there was, and considered when horses with corns did not show lameness it was due to their being trotted only a short distance. Dr. Field said there were times when this could not be otherwise. Dr. Coates held that no horse should be passed that had not been examined both after and before he had been freely trotted. As to the question of bruised heel, considerable allowance would have to be made. If it was not accompanied with lameness he would pass.

Many other points were discussed by the members present, to a late hour, and a motion was made to continue the discussion at the next meeting of the Society, but an amendment was carried that it be closed by the Chair. Dr. Liautard said the subject of the paper was one that afforded an almost endless field for discussion, much of which had been gone over many times. The question was always an interesting one to the profession, as there

were so many different opinions on the many points raised. He thought it perhaps best to close the discussion and not carry it forward to another meeting, at which the Society had been promised another paper. In referring to the paper he would say that he did not consider a horse fit to be examined for soundness when he had a temperature of 104°. He had lately been requested to examine a horse whose temperature was at that point, and he had returned him to the owner with the request that he be sent for examination again in a few days, which was done. The horse proved both sound and healthy. As to the question of taking off the shoes to examine for corns, he did not consider it necessary except when there was room for doubt. However slight that doubt might be, he would certainly have the shoes removed. In the matter of liability, when giving a warranty of soundness, he considered that if it was stated that the horse *was* sound, it would leave the surgeon liable if there existed any unsoundness that he had failed to detect. What we had to do was to see if we could discover any unsoundness, and if we could not certify to that effect. He considered that all horses examined for soundness should be under the examiner's own eye for at least two hours.

Dr. R. McLean exhibited before the members of the Society the tuberculous lung of a steer from Texas, also the kidneys and a portion of the aorta of a colt nine months old, the former being about three times their natural size, and the aorta entirely obliterated. A vote of thanks was extended, with a request for a written report of the latter case, which was promised.

A vote of thanks was tendered the essayist for his paper.

The Board of Censors reported progress in the matter of certificates of membership, and in favor of Drs. Raymond and Arrowsmith for membership. The latter was elected an active member and the former an honorary member, and on motion the fact and resolution of his so being elected was ordered to be engrossed and presented to him.

Application for membership was received from V. L. James, V.S., Springfield, and U. E. Cuff, D.V.S., New York, both of which were referred to the Board of Censors.

Prof. James L. Robertson was appointed essayist for the next meeting, which was accepted.

Meeting adjourned.

W. H. PENDRY, Secretary.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

(Organization Meeting.)

The above named Association organized at the office of Dr. James C. Corlies, No. 240 Market street, Newark, N. J., on Tuesday, February 5, 1884. Fifty (50) postal cards were mailed to veterinarians of the State, notifying them of the intention to organize a State Veterinary Medical Association. Twenty (20) veterinarians responded to the call.

At 2:15 P.M. J. Gerth, Jr., D.V.S., called the meeting to order. Dr. Corlies was elected temporary chairman and the Association organized with the election of the following named officers :

President—J. C. Corlies, D.V.S., of Newark.

Vice-Presidents—C. Laurenz, V.S., of Newark ; Wm. B. E. Miller, D.V.S., of Camden ; C. K. Dyer, V.S., Mount Holly.

Secretary—J. Gerth, Jr., D.V.S., Newark.

Corresponding Secretary—J. H. Dancer, V.S., Orange.

Treasurer—A. Sherk, V.S., Newark.

Board of Censors—T. B. Rogers, D.V.S., Camden ; L. R. Sattler, V.S., Newark ; D. J. Dixon, D.V.S., Hoboken ; W. H. Arrowsmith, D.V.S., Jersey City ; Wm. G. Schmidt, D.V.S., Newark.

Dr. W. H. Arrowsmith moved that this Association be known as the Veterinary Medical Association of New Jersey. This motion was seconded and adopted.

A motion was made by Dr. J. Gerth, Jr., that the President appoint all committees, which motion was amended, that not more than three (3) members be appointed on each committee. Carried with amendment.

Dr. Dixon moved that the President call the next meeting at an early date. Seconded and adopted.

Meeting adjourned.

J. GERTH, JR., D.V.S., Secretary.

FIRST REGULAR MEETING.

The first regular meeting of the above named Association was held at Kleb's Hotel, Broad street, Newark, N. J., April 30, 1884.

The President, Dr. J. C. Corlies, called the meeting to order at 3 P.M. Fourteen (14) members were present.

The minutes of the organization meeting were read and adopted.

Dr. Dixon remarked that before proceeding to any other business it was necessary to first decide upon the adoption of the Constitution and By-laws.

Dr. Miller moved that the report of the Committee on Constitution and By-laws be received, ordered read and adopted by sections. Seconded and carried.

Dr. Corlies, the President, instructed the chairman of said committee to proceed to the reading of the report.

Several sections of the Constitution and By-laws were amended and adopted as corrected.

The Association having adopted the Constitution and By-laws, Dr. Dixon stated that it was now in order to proceed to the election of permanent officers for the ensuing year. A motion to that effect was made, seconded and carried.

Drs. Miller, Dixon and Corlies were nominated for President. Dr. W. B. E. Miller, of Camden, was declared elected.

Drs. C. K. Dyer, of Mount Holly, and D. J. Dixon, of Hoboken, were nominated for Vice-Presidents and elected by acclamation.

Drs. H. W. Rowland, of Jersey City, and J. Gerth, Jr., of Newark, were nominated for Secretary, and J. Gerth, Jr., elected.

Dr. W. P. Humphreys, of Elizabeth, was unanimously elected Treasurer.

Drs. J. C. Corlies, T. B. Rogers, H. W. Rowland, L. R. Sattler and A. S. Leatherman were nominated to constitute the Board of Censors. All were elected by acclamation.

Dr. Corlies before retiring appointed a committee of two to

escort the newly elected President to the chair and thanked the Association for having conferred upon him the honor to preside over the organization of this society, the first of its kind in our State.

Dr. Miller on taking the chair addressed the Association with a few appropriate remarks and thanked the members for the honor of having been elected their first President.

After these few remarks the Association proceeded to business and Dr. Corlies arose to a question of privilege, which was granted. He severely censured the State Board of Health of New Jersey for improperly conducting the stamping out of contagious pleuropneumonia, accused them of employing incompetent persons to act as their agents, and of illegally collecting fees for services rendered by their agents, condemned their method of inoculation, etc. Dr. Corlies then introduced a resolution to that effect, requesting the Association to act upon it, and to endorse or reject it as they saw fit.

After considerable discussion it was moved that a committee of three be appointed by the Chair to carefully consider Dr. Corlies's communication and resolution and report at the next meeting. Seconded and adopted.

The Chair appointed Drs. Dixon, Rogers and Rowland as a committee to consider the above communication and report.

President Doctor Miller appointed Drs. Rogers and Rowland essayists for the next regular meeting.

The next regular meeting will be held at Atlantic City, August 14, 1884.

The meeting adjourned.

J. GERTH, JR., D.V.S., Secretary.

MASSACHUSETTS STATE VETERINARY SOCIETY.

Meeting called to order at 7:45 P.M., with W. Bryden in chair. Eleven members present.

The Executive Committee presented the Constitution and By-laws they had prepared and it was generally accepted.

Moved and seconded that an invitation be given to all the

regularly graduated veterinary surgeons practicing in New England to join the Massachusetts Veterinary Association. Lost.

Moved and seconded that Dadd's School Diplomas be accepted. Lost.

Charles Byrne, M.R.C.V.S., North Cambridge; W. T. Simmons, M.R.C.V.S., South Boston, and Benjamin D. Pierce, M.R.C.V.S., Springfield, presented their credentials to the Executive Committee and they will be reported upon at the next meeting.

Dr. Billings, essayist for June meeting. Subject: "Homœopathy: a Contribution to the Code Question."

The place of next meeting left to the Executive Committee. Adjourned.

W. BRYDEN, V.S.,
President.

J. F. WINCHESTER, D.V.S.,
Secretary.

SANITARY VETERINARY JURISPRUDENCE.

CAMMAN VS. LANE, *Detroit Meat Inspector.*

A suit which is interesting to farmers and butchers was tried before Justice Patton, of Detroit, on Wednesday, April 23. Mr. Lane seized eight calves at the Central Market, Detroit, belonging to Mr. Camman, the butcher. There is a city ordinance which declares that no calves shall be sold as food which are under four weeks old, and Mr. Lane seized the calves under authority conferred by this ordinance. Before the calves were removed, however, Captain Owen, Messrs. Barlum, Petz, Duff, Loosemore, McCune, Reeford, and a number of other respectable butchers looked at the calves and were unanimously of opinion that they had been wrongfully seized, and that in doing so Mr. Lane had exceeded his authority. A suit was accordingly brought by Mr. Camman against Mr. Lane for the calves, which were estimated as being worth \$8.50 each, the entire sum claimed from Mr. Lane being \$68. The butchers above mentioned and a number of others who are among the most experienced of the trade in the city gave it as their opinion that they were good calves; that they would make good veal, and that they thought they were over four

weeks old. It was also proved that Mr. Camman asked that Dr. Murray, veterinary surgeon, should be allowed to examine the calves, but Mr. Camman's request was refused. It was also proved that Mr. Lane sold the eight calf-skins to Mr. Ladue and received from that gentleman the usual market price for calf-skins. Mr. Ladue, who is a dealer in skins, stated that calf-skins range from eight to fourteen pounds in weight; that the eight calf-skins weighed 100 pounds, and that he buys skins at 11, 10, 9 and 8 lbs., so that, judging from Mr. Ladue's evidence, the skins of the eight condemned calves were above the average, which would be 11 lbs., they averaging 12 lbs. and 4 oz. It was also proved that the eight carcasses of the calves were sent to the Zoological Gardens. Dr. Murray, veterinary surgeon, was the last witness called. He stated that he had been appointed for two terms as State Commissioner to prevent the spread of contagious diseases among cattle and the sale of diseased meat; that he had also acted as U. S. Veterinary Inspector for the United States Government in both Michigan and Ohio; that while holding these offices he had been called on to make investigations in regard to disease, and that he had also made investigations as to the soundness and unsoundness of meat. He had heard the evidence as to the condition of the calves, and judging from what he had heard he thought the calves should not have been condemned. No witnesses were called for the defense, and Justice Patton on the conclusion of the evidence gave judgment against Mr. Lane for \$68 with expenses. The prosecution was conducted by Messrs. Penniman and J. G. Hawley, and Mr. Lane was defended by Messrs. W. A. Moore and Conely. The case excited great interest, the court being crowded during the trial, and the judgment of Justice Patton gave general satisfaction.

CORRESPONDENCE.

To the Editor of the American Veterinary Review :

A few weeks ago a Mr. Smith, representing *The United States Veterinary Journal*, published at Chicago, Illinois, called on the graduates of this city for the purpose, as he said, of initiating a

movement to form a State Association for Missouri, and thus furthering the interests of the profession. The call for a convention which he showed us was signed by half a dozen notorious quacks, not one graduate's name being on the list. He asked for our signatures individually, but each one wishing to consult with the others, requested him to call again, though on account of its commercial savor and the questionable signatures, we felt inclined to fight shy of the whole affair. This gentleman was finally referred to me by two or three of my colleagues, they agreeing to stand by my decision. The other graduates held their signatures in reserve, presumably to see how we acted. I told Mr. Smith that on no consideration would we recognize the quacks; that the way to elevate the profession in public estimation was not to call a convention of the graduates of the stable-fork and broom, and trumpet forth such a proceeding as in the interest of veterinary science. No compromise could be effected, not even to the extent of admitting those men who had practiced ten years or more. The line must be drawn somewhere, and we would have nothing to do with any association which was not *exclusively* of graduates of recognized colleges. At any rate, we did not consider that the time was yet ripe for the formation of a State Association. Nearly all the graduates in Missouri had very recently settled down, and could ill afford to leave their new-born practice at the present time. I pointed out the danger of calling an indiscriminate convention of practitioners; how the quacks could outvote us ten to one, and have everything their own way. To this Mr. Smith replied that their great idea was to advance our interests, and as a secondary matter secure the position of *The United States Veterinary Journal* as the official organ of the Association. That other State Associations were so largely tainted with the empirical element (a fact which I forgot to state I asked him about in our conversation), was their own fault; the *Journal* only asked those who were reputed to be graduates to sign these convention calls, and it remained with ourselves to examine the credentials of such as presented themselves for admission. He was sorry to find that we were not in favor of the convention, and hoped there would be a more favorable outlook

in the future. Mr. Daniels would have made arrangements with railways and hotels for reduced rates to those who desired to attend. If the graduates would not take the matter up, of course the whole thing would have to fall through. Before he left I told Mr. Smith that the profession in St. Louis would be found ready at any time to advance the cause of science, but we could not possibly consent to recognize these proposed constituents of the Association as our equals, and advised him in future to get a list of graduates of what recognized colleges there are or have been in existence, and exercise a little more circumspection as to the qualifications of those who have been signing these calls for conventions in the various States. We flatter ourselves that Mr. S. found that the graduates of St. Louis entertained a higher idea of both professional duty and dignity than was shown by some of the regulars in other cities.

I have been impelled to lay the preceding before the profession in view of the extraordinary course which this *Journal*, so professedly conservative of our interests, is taking in this matter. To our great surprise and indignation, in a recent issue of the *Journal* appeared the original call for the convention, signed by the following names: Delkas Hass, northeast corner 3d and Chouteau ave.; Edward Scheele, 614 Lafayette ave.; Henry Scheele, Sr., 614 Lafayette ave.; Louis Scheele, 1204 Russell ave.; Ph. H. Hesse, V.S., 709 Russell ave.; Dr. J. T. Wheeler; John J. Kelley, 2613 Washington st.; S. Farrell, 2613 Walnut st.; Frank N. Earl, 2926 Chouteau ave.; all in this city, remember! Not one of these signatures, to the best of our knowledge and belief, is that of a professional man; all, as far as we can ascertain, are quacks of the first water. There is not the slightest shadow of an excuse for such a direct insult to us. I gave Mr. Smith the names of those graduates practicing here, and informed him of the standing of those men whose signatures he had already obtained. The convention is called for May 6th, and a pretty affair it will doubtless be. Meanwhile, we are trying to get the papers to take up our side, and are informing our clients and the general public about the circumstances of the case, so that they may judge of the proceedings in the manner they deserve, and

place no reliance upon anything said or done at a convention which represents quackery and not the profession.

We emphatically protest against being placed in this anomalous position by the so-called *United States Veterinary Journal*. We declare the convention to be held in St. Louis, Mo., May 6th, 1884, under the auspices of said *Journal*, to be a *direct insult* to the profession at large, and the practitioners of St. Louis in particular; we refuse to believe that the proper way to advance the interests of the veterinary profession is to form a coalition with quackery; we absolutely deny the right of *The United States Veterinary Journal* to put aside the objections of graduates, and advance its private interests at the expense of our young and noble profession. We ask the professional papers to ventilate the matter thoroughly; and, finally, we pledge ourselves to unflinchingly withstand any infringement of our rights, as is proposed by the commercial clique in question. We are few in number, our opponents are many; let all thinking members of the profession give us their moral support. *Vis unita fortior.*

H. H. JAMES, V.S.

OBITUARY.

PROF. DR. LUDWIG FRANCK, Director of the Veterinary School of Munich and Honorary Associate of the R. C. V. S., died lately at the age of fifty years. He was one of the foremost veterinarians of Germany. His works on veterinary anatomy and veterinary obstetrics are the most important among many with which he enriched the literature of his profession, which is largely indebted to the labors of his pen.

EDWIN M. FITZGERALD, D.V.S, died in Greenpoint, L. I., on the 20th of April, 1884. His death was the result of accident or culpable negligence, he having been run over by a train of the Long Island R. R. He graduated in 1882, at the Columbia Veterinary College, and was afterwards appointed assistant to the Chair of Theory and Practice. He worked hard for his profession and did full justice to his calling, and was much esteemed as a teacher and as a practitioner.

NOTICES.

VETERINARIANS WANTED.

Mr. R. F. Myers, of Altoona, Pa., writes asking for a young graduate to start practice in that town. He says the place has 5,000 inhabitants, and no veterinarian within one hundred miles.

Mr. Fred D. Nowell, of North Platte, Neb., writes to the *Breeders' Gazette* on the same subject. His letter, being kindly referred to us by Dr. N. Paaren, says, "There are a great many horses in this and adjoining counties, among which are some of a good class, and there seems to be an effort to improve in breed, size, etc. There is a good opening for a veterinary surgeon. . . . I will undertake to introduce him to all the stockmen."

MEWS AND SUNDRIES.

CAFFEINE is highly spoken of as a substitute for digitalis.

GLANDERS.—New cases of glanders in Illinois continue to be reported by the State Veterinarian.

PLEURO-PNEUMONIA.—Reports of the recent outbreaks of contagious pleuro-pneumonia in Staten Island and Pennsylvania show some decided measures should be adopted for the eradication of this disease.

SHORT PERIOD OF GESTATION.—My Jersey cow, Lady Wellington, five years old, dropped her calf August 3, 1883. She was served again August 12, and on May 2, 1884, dropped a fully developed bull calf. The cow and calf are all right. That makes two calves in one day short of nine months.—E. S. H., Towanda, Pa.—*Conny Gentleman*.

SIMPLE HEALING REMEDY.—Human skin and that of young rabbits have been successfully applied in small pieces to large healing surfaces in wounds. Dr. Wilson, however, in the *Medical News*, claims to have obtained very much better results from the use of the internal membrane of hen's eggs. The egg should be fresh and warm.

YELLOW FEVER AND PREVENTATIVE INOCULATION.—The *Gazette Hebdomadaire de Medecine et de Chirurgie* quotes a Rio de Janeiro paper to the effect that Dr. Domingo Freire's supposed discovery of the contagium vivum of yellow fever, and of the practicability of preventing the disease by inoculation, are attested thus far by 211 successful inoculations.—*N. Y. Medical Journal*.

TUBERCULOSIS IN HENS.—*The Journal of Comparative Medicine and Surgery* says: Professor Joline, of Dresden, (*Deutsche Land-Press*), reports quite a number of cases of tuberculosis in hens, which were traced to their being fed by a person having the disease, and who had the habit of giving the hens meat which she had chewed up for the juices. She was very fond of the hens, and in summer weather they would congregate about her, and frequently would pick up the sputa which she had coughed up. The liver, kidneys and intestines were mostly affected.

DESTRUCTIVE BUFFALO GNATS.—A well-known traveler for one of the largest grocery houses in Memphis, who recently returned from Mississippi, reports fully 1,500 mules in Yalobusha and Grenada counties, Mississippi, as having fallen victims to buffalo gnats within the last week. Their depredations this year exceed all previous records, and there is no hope of the pests disappearing until warm weather. Over 600 mules have been killed by them within a radius of ten miles from Grenada, Miss.—*Dnuton's Spirit of the Turf*.

SHOCK AS A THERAPEUTIC AGENT.—Dr. James P. Tuttle, of New York City, writes: "Your short notes on 'Shock as a Therapeutic Agent' recalls to me a practice among rude, country veterinary men, which I was able to see applied some years ago. It is the shock treatment for lock-jaw in horses, and is applied as follows: A board, one inch thick and about six inches wide, is laid across the forehead, and struck forcibly with an ax or hammer, staggering, or even felling the animal to the earth, when relaxation of the spasms is said to occur. Those who practice it aver it never fails. Certainly the case I saw was good evidence of the truth of this assertion, for the spasms at once relaxed, and a tobacco poultice being applied, they did not return."—*Medical Record*.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Veterinarian, Veterinary Journal, Quarterly Journal of Veterinary Science in India, Journal of Zootechnie, Presse Veterinaire, Recueil de Medecine Veterinaire, Archives Veterinaire, Gazette Medicale, Bulletin de l'Academie de Medicine, Clinica Veterinaria, Giornale di Anatomie, Fisical and Pathological degli Animali, Revue fur Thierheilkunde und Thierzucht, Revue Scientifique, Repertorium der Thierheilkunde, Tidsskrift fur Veterinærer, Schweizer-Archiv fur Thierheilkunde, Annals de Bruxelles.

HOME.—Journal of Comparative Medicine, Medical Record, New York Medical Journal, American Agriculturist, Country Gentlemen, Prairie Farmer, National Live Stock Journal, American Cultivator, Scientific American, Turf, Field and Farm, Spirit of the Times, Breeders' Gazette, Maine Farmer, Druggists' Circular.

JOURNALS.—Hearth and Home, Rural (Canada), Ohio Farmer, Medical Herald, National Tribune, Missouri Republican, Western Medical Reporter, Home and Farm, Polyclinic, &c., &c.

BOOKS AND PAMPHLETS.—Diseases of the Ear, by Dr. O. Pomeroy; Nature Viranti de la Contagion, by H. Bouley; 12th Annual Report of the Zoological Society of Philadelphia.

CORRESPONDENCE.—J. A. Myers, D.V.S., J. E. Ryder, D.V.S., J. Gerth, Jr., D.V.S., Dr. Winchester, H. H. James, V.S., W. Pendry, D.V.S., C. B. Michener, D.V.S., A. J. Murray, V.S.

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AMERICAN VETERINARY REVIEW,

JULY, 1884.

ORIGINAL ARTICLES.

ANNUAL REPORT OF THE DEPARTMENT OF HEALTH OF BROOKLYN.

By Professor L. McLean, M.R.C.V.S., Veterinary Inspector.

DEPARTMENT OF HEALTH, }
BROOKLYN, December 26, 1883. }

J. H. Raymond, M.D., Commissioner Department of Health:

SIR—In this, my annual report as Veterinary Inspector to your Board, I beg to particularly draw attention to the continued and increasing prevalence of contagious pleuro-pneumonia amongst the milch cows of the city and the immediate surrounding district, with the hope that you may be able to bring some concentrated action to bear to stamp out a disease that is financially ruining those who are locally engaged in the trade, supplying our families with unwholesome milk, and many of our butcher shops with beef, if not directly dangerous, certainly in the highest degree non-nutritious.

My official capacity as Veterinary Inspector to your Board during a number of years, and my active connection with the commission appointed by Governor Robinson in 1879, under General Patrick, enables me to speak with a practical knowledge of the actual state of matters down to date; and I consider that it may be safely stated that there is in the Union no other city of the same extent, in which the milk-producing stock is so extensively affected with contagious pleuro-pneumonia.

The introduction and history of this disease in Brooklyn may be briefly stated as follows:

Peter Dnnn, who, in 1843, kept a cow stable in the vicinity of what is now Hamilton Ferry, purchased a cow off a vessel arriving from some port in Holland. This animal shortly afterward developed contagious pleuro-pneumonia and died, infecting the other cows in the stable. He, becoming alarmed at the mortality among his stock, disposed of the balance as best he could.

We next hear of it as almost decimating some of the distillery stables in this city, and from this focus it has spread over almost every section of this island. Indeed, from this, comparatively speaking, germ can be traced the origin of contagious pleuro-pneumonia in the United States.

In this neighborhood the disease continued to spread, no official action having been taken to check its progress, until Governor Robinson's attention was drawn to its prevalence in this city in general, and the Blissville districts in particular, in a communication from you, as Sanitary Superintendent of the Brooklyn Board of Health, in January, 1879, the result being the appointment of a commission, of which General Patrick was the head, with Prof. Law, of Cornell University, as its veterinary adviser.

Upon investigation by this commission, the identity of the prevailing disease with contagious pleuro-pneumonia was satisfactorily established, and many proofs of its widespread existence obtained. The policy adopted by them was that of slaughtering the affected animals, quarantining and disinfecting the stables in which affected cases were found, and strictly prohibiting the system of inoculation.

In carrying out these measures, thousands of dollars were expended and many animals destroyed during the three years existence of the commission, with only directly negative results, in so far as the permanent control of contagious pleuro-pneumonia in Brooklyn was obtained.

Considering the lengthened and tenacious hold this disease has secured in this district, and the exceptional local conditions, along with the indefinite latent period of contagious pleuro-pneumonia, no other result could have been anticipated from such a course.

There are, sir, about 5,000 head of milch cows contained in about 450 stables, within and just outside the limits of this city. Ten per cent. of the former are affected in one or other of the various stages of this disease, and at least eighty per cent. of the stables are of themselves permanent centers of contagion, and that beyond the control of disinfectants.

The experience of foreign countries, and the recent investigations of so-called contagious pleuro-pneumonia, as well as other contagious bovine diseases, have fortified the hands of sanitarians in their efforts to control their spread, and have enabled them to view their importance and ætiology in a clearer light.

I consider that the term contagious pleuro-pneumonia, in its application to this disease, is a misnomer, and that its character would be more intelligently comprehended in defining it as a zymotic bovine lung-fever, the fever being the disease and the pulmonary complications the sympathetic features. In my opinion, there are three distinct periods in its progress—viz: the latent, incubative, and special appointing—and by giving due consideration to these three stages, you can better comprehend the necessity of careful measures in effectually dealing with this pest. During the first of these stages, as the name implies, the germ may be lying latent in the system, and this for an indefinite period, ranging from four days to four months, during which the most critical examination will fail to detect in the animal anything abnormal. The second or incubative period is characterized by the presence of general febrile symptoms, while the third stage exhibits the pathognomonic pulmonary lesions. That due weight has not been given to the often protracted first or latent period, and to the tenacious vitality of its germ, must be ascribed the non-success of many of the efforts hitherto in vogue, while attempting to eradicate the disease both here and in other countries.

As to remedial measures. Experience has taught us that there are but two courses which can be taken in meeting or controlling this scourge—viz: the slaughtering process, and that of inoculation—and the relative merits of these different measures, in their applicability to Brooklyn, can be briefly stated as follows:

Taking the latent period of the disease into consideration, it

will be at once apparent that, if the slaughtering process is to be adopted, not only must the acutely affected animals be destroyed but also all those who have cohabited with them, and *that, on the premises they occupy* ; but further, we find that a majority of the cow stables in this city are frame buildings, having wooden floors, many in a decayed condition, which, with the surface soil, have become thoroughly saturated with the germs of the disease; hence they are beyond the power of disinfection, and to thoroughly stamp out the disease by this process would necessarily entail the entire destruction of the various stables as well as their occupants.

So many of these stables being known centres of contagion, who is prepared to pay this enormous outlay? As I consider that, in this city anything short of this would be a waste of money, especially seeing that it would at the same time completely paralyze this branch of business. In every place where the disease has obtained such a stronghold, and the centres of contagion are so numerous as here, the slaughtering process has proved a practical failure.

The second course left to you, that of inoculation, has, for at least eighteen years, been practiced in a rude form by the individual cow owners of this city, and I believe with results satisfactory to them. Inoculation, although surrounded with many difficulties and some objections, is now admitted to be an effectual prophylactic measure, and is advocated by such men as Fleming of England, Willems of Belgium, Mitchell of Australia, and Law of Cornell University. And its practical benefits have been proved beyond a doubt by Rutherford of Edinburgh, who has in that city, during the last few years, successfully operated upon upwards of 4,000 milk cows, and thus, after the slaughtering process had proved a failure, has succeeded virtually in clearing the Scotch metropolis of this pest, that had defied all other efforts for thirty years. It would seem to me that where the disease has existed so long as it has in this city, that this course is much the preferable one, not only from a scientific point of view, but also from that of economy. Our own experience as shown by my report to you in October, substantiates this assertion, and I have since then inoculated a considerable number with equally

satisfactory results. All my subjects were in highly contaminated premises, and none of them, although still occupying the same, have shown any symptoms of contracting the disease, although in several instances where fresh cows were introduced, and not protected by inoculation contagious pleuro-pneumonia has been contracted and the animals have died.

But to derive the full benefits of the principle it must be made obligatory and systematic, many of its details requiring to be scrupulously attended to. So far, under your instructions, my efforts have been devoted to establishing the efficacy of the principle, and have been hampered by the limited authority of your Board. In this consideration of inoculation, as stated above, I have viewed the subject as a matter affecting this local district which, from its geographical position, presents the elements for almost perfect isolation and quarantine, and the exportation of live cattle from this island being almost nil, even its entire prohibition, if necessary, would entail no serious loss. Seeing that much of the milk supply of this city is derived from dairies situated immediately beyond the limits of your jurisdiction, such as in Blissville, Ridgewood, East New York, Flatlands and Flatbush, and which are known to be districts highly infected with zymotic bovine lung fever, it will be necessary to at least bring them under the same strict supervision that is being given to the stables located in Brooklyn.

The eradication of the disease in the United States would demand the action not only of local authorities, or even of State boards, but also the energetic efforts and supervision of the national government. And while I thus advocate the adoption of inoculation to meet *our* local condition, in recently invaded districts and isolated cases, its extirpation can be more radically effected by the slaughtering process carried out in its entirety.

In support of the above views allow me to quote from an article by George Fleming, LL.D., F.R.C.V.S., of London, a sanitary veterinarian second to none, who says: "There is at length a prospect of release from the ravages of one of the most serious scourges that ever visited the bovine population of this or any other country, if the government cares to adopt those measures which have now been proved to be completely efficacious

in extinguishing it. Contagious pleuro-pneumonia still lingers in these islands, and will continue to do so in all probability until the end of time, unless its insidious contagiousness and protracted latency are fully recognized, and the utility of inoculation as a protective measure fairly acknowledged and resorted to when necessary. The mere slaughter and isolation of diseased centres for a short time, as is at present carried out, will not extinguish the scourge. The evidence in support of protective inoculation is now too serious to be sneered down, or made the sport of small witlings who joke about 'pleuro-pneumonia in the tail.' It is curious that while certain authorities have done their utmost to discredit inoculation, they have never attempted to explain, if they understood, its phenomena. There can be no doubt that when properly performed, and when all due care is exercised, it is as protective, if no more so, than vaccination is of human variola; that the morbid process set up as the result of inoculation is specific, and is not witnessed, so far as we can ascertain, in any other than the bovine species, and that the entire organism appears to be affected.

"This pitiless and continued slaughter of diseased cows, and the terrible embarrassment to agriculturalists which the present fruitless measures produce, will soon become little short of a crime, in presence of the absolute immunity and humanity which are the attributes of protective inoculation."

ALUMNI ASSOCIATION OF THE A. V. C.—ITS HISTORY.

BY W. H. HOSKINS, D.V.S.

A Paper read at the Alumni meeting, February, 1884.

Continued from page 120.

Passing on to a finer subdivision, one from among our number is now officiating as Milk Inspector for a large district, and to his zealous labors a large body of the people of the second city of the Union have much for which to be thankful, for from his reports I garner a large and varied number of methods of adulterating and doctoring milk, some of which are highly injurious to our diminutive population, and instead of giving health and

strength, tend to deteriorate and break down their and our physical structure. The numbers filling these positions should be largely increased in and contiguous to our large cities, and from no class could they secure more able men than from the true veterinary profession. Another now fills the position of Meat Inspector, and I am sure but a few years will elapse when the history of this Association will count scores of her men filling similar positions. I need not dwell on its importance, for it is an hourly question with almost every living being on the face of earth. When it becomes a position to be doled out by a partisan master, it alike becomes a position of a mercenary character, and bribery and corruption soon rob it of its value to the people. This is why it belongs within the limits of our domain, for few men with a professional reputation at stake would stoop to such degrading influences.

One of our alumni fills a position as veterinary surgeon to the police department in one of our large cities. While the scope of his usefulness may be limited, still in time it will prove a necessity, and it marks a broader recognition of the profession that is gratifying to behold.

The large number of monied men now turning their attention to stock-growing in our western prairie lands is destined to become one of the most gigantic interests of this great country, and where such large interests are at stake much precaution will be taken to preserve and foster them. In this light, two from within our walls have been called; one in a short season has brought back to us the most remarkable volumn of statistics as to the value, methods, dangers, complications, etc., of the operation of ovariectomy, that is now extant in this country. He proved beyond doubt that the operation through the flank is not the best; that through the vagina was the quickest performed, and greatly added in a shorter time to the value of the animal in market, which of course is the prime question in the cattle-growing business. The dangers of contagious and infectious disease in such avocations are highly important, and the work of one competent surgeon, among such large numbers of animals, would prove in such times of incalculable value, and the need grows larger each day. These posi-

tions that I have referred to, with one or two others that I shall speak of hereafter, are largely based upon the practical side of our profession, and from no school in or out of America have so many practical men marched forth as from our alma mater. It is then with no feeling of distrust that I urge you to agitate and necessitate among your people the importance of these positions, and to be continually drilling yourselves to the point of being able to fill them. Great has been the progress of the profession under our National Government, which, until a few years ago, allowed almost anyone who styled himself a veterinary surgeon to hold such a position; but this has changed, and while the compensation is yet too small, and the promise of rank unattractive, only graduates of recognized colleges can now fill these positions; but their condition has been bettered, and the outlook is much brighter. Good and efficient instruments are now furnished, and the category of drugs now includes almost all that are requisite in the advanced condition of our science. To the Department of Missouri one of our most trusted fellow-graduates has been called, and from his frequent and valuable contributions to the REVIEW we are fully assured that he is serving his profession well, and from him we can look for much advancement; also for suggestions by which we as a body of the profession may exert our influence in the betterment of the condition of army veterinary surgeons. Two others of our alumni have entered the United States Cavalry, and followed for a time the oftentimes monotonous routine of a life under such conditions. From one I have received a long letter deploring the associations that are offered the veterinarian in the army, and sadly referring to the boasted qualifications of former surgeons in his regiment. He says there is but little to do, for the so-called farrier in each company suits his own pleasure as to when he needs your assistance, and from thus being burdened with a large amount of idle time, the degrading vices of drinking and gambling have won many whose early professional life promised a good and bright career; this has arisen in great part from the fact that those whom you are ranked with have these accomplishments as their aim. A better rank would alter this and make such positions an honor to hold, and to the

accomplishments of this I trust that each member will give his earnest support.

In many States we find our members working hard in their efforts to rear up State Associations, through which they are hoping to secure legislation, to have the profession work as a unit for any good step forward, and at the same time to promote better fraternal feelings by mingling together their ideas and experiences and thus enhance the practical value of each individual member. In the associations formed about one year ago in several States, many are found laboring earnestly, while others have found it necessary to form other associations, that shall count in their membership only those who are graduates of recognized colleges. I shall not enter here into the discussion of the wisdom of such movements, for brevity would not permit a just consideration of the question. In the States of New York, Pennsylvania and Iowa, such associations are now at work, while New Jersey will soon move to the fore in the same direction. This I do know, that our men have accomplished much good by such work, and none have been more zealous and faithful. In my own State vicious legislation has been defeated, wise legislation agitated, medical schools have been led to recognise our graduates, and many of the boldest forms of empiricism stamped out; while to the individual members much good feeling has been aroused among them, and from discussions and reading of papers much more efficient work emanated. We have made our meetings worth coming to, and can boast of a larger percentage in attendance than any other now in existence. This I believe to be one of the best methods of professional advancement, and I would urge every member to identify himself with such movements as long as they are maintained within the limits of a just propriety and true methods of labor.

A few of our number have found time, at a great sacrifice, to become graduates in human medicine, which is a step to be very much encouraged, for it has a two-fold advantage in that it will make one a better practitioner and that it will allow you to mingle with the medical profession, in their societies, etc. To the medical profession we owe much, for from among their number we have had some very zealous workers in our college. From

them we can gain much more, and their recognition and support will often lead you in a short time where years of zealous labor would otherwise have been required. Through this medium we gain an entrance to their associations and are enabled to encourage a heartier support in our steps of advancement, and profit by their discussions as well as to furnish them with many valuable points in public questions of medical hygiene, etc.

From position to position I have now led you hurriedly, with the hope of not tiring your patience, but to the topmost round I now lead you, as I present to you the facts that no less than six of our men have been called to fill professorships in prominent colleges and schools throughout our country. To our own alma mater four have returned, and, be it said for them, that few have bade farewell to their teachings but what felt that they were worthy of the honors conferred upon them, and filled their positions with ability and power. To other schools some three have gone, and their sphere of usefulness has served many good ends, and oftentimes brought into the profession good and valuable workers. These honors have been the reward of true merit, and the efficiency of the schools has been largely increased by their presence. Their future work is full of promise and to such seats of learning will be drawn only young men of ability and power, and thus a double movement forward in our progress is given. With one, and from my own class, of which I am proud, the call has been to one of the most learned colleges of the world, and his hours of labor in his calling will be among the richest and broadest minds our country possesses. Naturally from these must emanate efficient laborers, and our hearts can rejoice that it is in part one of the fruits of our Alumni Association.

While all this has been achieved and is now recorded, the future has a greater work for us to perform, and it would seem fitting here to counsel my fellow-members for a few moments. Remember that it is personal work that is going to collectively make the vast strides forward that are to make the years of our professional history, and none are more able to perform this labor than you and I, fellow graduates. The first and great point you must watch and foster is your time, for it flieth quickly, and while

the great majority of you are young, ambitious, strong and untrammelled, you must labor with unceasing ardor, for, I tell you, were you to give half the earnest labor to your work that we give to idle and fruitless hopes and contemplations, the sum of our labors would be greatly enlarged. *Economy of time* is the great problem for us all, for he who well plans the seasons of labor has much time for recreation and true enjoyment, and strongly would I have you remember that a portion of your times belongs to the work of your college parent; do not forget her interests, serve them in every way, have your people know of your school, watch the progress of your fellow acquaintances, and when one leans toward the profession as a calling, see for him that he starts right, and when another turns toward it who is unfitted for its labors, try and turn his attention away from it, for I assure you we have too much dead wood already. Examine yourselves daily in what way you are particularly adapted for leading parts of the work and not what you would best like or which seems the nicest. If it is in physiological work, draw around you all the means for pursuing it in a thorough manner; if it is in the line of original researches of therapeutics, give a good portion of your time persistently to it; if it is in the solving of the many doubts and uncertainties of our contagious diseases, seek every opportunity of enlarging your knowledge in that direction, for in this field there is the widest room for practical knowledge and experimentation; if the work is the enlarging of veterinary intelligence and general history, identify yourselves with all movements and associates that shall make you and us more powerful and useful, and the sum total of a year's labor will be ten years progress of our noble calling.

Again I say, daily compute your time, and the more you do the more you will find yourselves able to do. Few men ever suffer from too great an amount of brain-work. It is the transgressing of the laws of nature in the manner and mode of their work, that breaks them down physically.

Another great danger peculiarly prevalent among professional men is the tendency to become narrow in one's ideas and work, so that too few men of our day can see beyond their own horizon. Extend your knowledge in every way, broaden your ideas and in-

crease your power and influence in every good and earnest way. In your town, city, county and State give your influence and support to all good movements, and thus identify yourselves with their interests, and you will find they will associate theirs with yours. Keep yourselves alive to the public questions of the day, and when you may be called upon to solve some important question or case for your people's interest, you will increase your value as men and bring supporters to your calling, who would otherwise have been indifferent to your appeals for recognition. It is appalling when I contemplate that the second city of the Union has not to my knowledge ever called one of our men to any public position of honor, trust or emolument, and I venture to say this is true of many other localities.

Before concluding, I may say that the hand of death has not been idle among us, but from our members she has called no less than six; three from the class of '76; one from the class of '79; and two from that of '80. Our loss in this respect cannot be measured, for among them were some whose love and devotion for their chosen calling could hardly have been greater or more devout. Of the class of '80 we find our kind friend Cowhey, who, first in his class at the close of his college career, from the most indefatigable labors, which cost him much, for the early warnings of that deceitful disease were then announcing themselves, but so closely and longingly did he contemplate the value of increasing his knowledge that he remained at the wheel until the last wave had passed over his head, that bespoke the utter destruction of the craft he had launched into our profession, and that which to us all seemed to proclaim a bright and successful career was cut down in its infancy, and our hearts must to-day mourn such a loss, and look upon blank pages in our history that once seemed destined to be filled with a grand and good history. Another of that same class, our fellow-graduate Wing, seemed destined to be a victim to one of the dangers of his calling. From an injury in the pursuit of his daily labors, he was suddenly stricken down with a fatal malady that soon spent its course, and another of our young and promising members was removed from our midst. At college he was not the brightest of his class, but his studies were

always pursued with an earnestness and persistency that followed him in his career as a practitioner, and which were making for him a large practice and much credit for his ability in the field of his labors. Of the others personally I can say but little, save that they all were in the enjoyment of good practices and daily increasing their sphere of usefulness, when that awful and final summons called them from this world, and left to us the sad duty of recording an unfinished page in our history, and but a partially completed professional career.

INOCULATION OF BACILLAR PHTHISIS.

(Extracts from Mr. G. SEE on Phthisis Pulmonalis.)

The true, direct, efficacious cause of the tuberculous process is resumed, in a single word only : the *bacillus*.

Histology gave no answer to the question of the nature of tubercle, and could neither establish the precise characters of the perituberculous inflammatory nature, nor distinguish the true tubercle from those common inflammatory products known to-day as pseudo-nodules. The powerful intervention of experimental pathology was necessary to terminate these byzantinal discussions upon the connections of the tubercles with the phlegmasia. It will demonstrate conclusively that phlegmasias, so called, perituberculous, are entirely of the domain and even of the nature of phthisis ; it will prove, besides, that the tuberculous nodule, notwithstanding its close resemblance to the false tubercle, presents an unalterable, though at the same time characteristic, property. This is the transmissibility ; it is the inoculability, after two or three generations, by successive cultures. How has experimental pathology proceeded to reach these positive results ? It has simply to reproduce the disease, entirely, and under all its forms. To reach this it has introduced into the organism of the superior animals, through their various roads of absorption, tuberculous matter, or rather the parasite which produces its virulency.

The processes of experimentation consist precisely in introducing the tuberculous substance ; 1st, by an insertion of

virus under the skin, in the serous membrane, in the anterior chamber of the eye; 2d, through the artificial and forced use of food coming from the tissues of the phthisical man or of tuberculous animals. Among these aliments, that which interests us most is the milk obtained from tuberculous cows, or from animals affected with tuberculous phthisis. 3d. The third mode of producing experimental absorption consists in breathing the contaminated air expired by sick beings, or, again, the air that has passed over tuberculous products, among which are dried and pulverized sputa. So far we have in view only the inoculated tuberculosis, which is yet, very fortunately, entirely experimental, the fact of the disease being contracted by inoculation not having been demonstrated in man.

Tuberculosis was inoculated some twenty years ago by Villemin; it is to him that belongs, notwithstanding a few very imperfect anterior attempts, the honor of having produced, by inoculation, the disease in animals, and demonstrating in this way the morbid proofs, and proved its specificity and its virulency.

Conditions of the Experimentation.—Several conditions are necessarily indispensable for the success of the operation, and it is because they have been overlooked or intentionally neglected that for so long a time numerous deceptions and unjust suspicions were entertained. 1st. The substances for inoculation must be not only tuberculous, but baccilliferous, and free from any septic microphyte. 2d. The animal experimented upon must not be refractory to tuberculosis. 3d. The inoculation must be performed on organs or tissues which are not specially susceptible to excessive inflammatory action.

I.—Bacilliferous Substances.—A point in discussion was, whether it was necessary to employ, preferably, miliary granulations, or the tubercle, or the caseous, or the so-called caseous pneumonia, which was first suspected of being inefficacious. Successes were obtained with all these diverse products, which are all phthisiogenous, because they contain the bacillus. Without this agent, which is the virulency itself, any attempt to inoculate would fail. It is for this reason that one may as well inject the so called scrofulous matter of bones, of glands, or the tubercle of

the genital organs. It is for this reason, also, that it is sufficient to know which are the tissues or the liquids which are bacilliferous, in order to utilize them; and it is demonstrated that the bacillus occupies in the tubercles, whether its origin be local or general, the parts in a state of softening, and in the nodules themselves, the central part of the neoplasm, the giant cells. Among the liquids, one must never depend on the blood, the urine or excreted substances; the pathological secretions of the mucous, the muco-pus of the products of expectoration are those which possess the maximum of virulency.

Fresh Bacilliferous Substances.—With the exception of the sputa, which keep their virulency for months, the matters used must be fresh; and consequently the tuberculous remains of man cannot be used, on account of late post-mortem changes. Natural or artificial tuberculous animals ought not, and cannot, furnish substances of inoculation, except when fresh killed. Putrid matters give rise either to putrid septicemia or are powerless. These precautions that Villemin recommended, without being able to explain, have for good reason the biological history of microphytes. We have learned two important facts; by contact with matter in putrefaction the bacillar microbes often lose their virulent power. This explains the failure of inoculations by mixed matter. And again, the injection of putrid matters killed animals by septicemia and failed to develop tuberculosis.

II.—Animals susceptible of Tuberculosis or refractory.—The choice of animals to render tuberculous is also a point of great importance. We know, to-day, which animals ordinarily take phthisis and die from it, and also which are refractory. The guinea-pig is easily infected and still more easily inoculated; the rabbit is the predestined victim of the bacillooses, whether developed spontaneously by contagion or communicated by the physiologist. It was even accused of becoming phthisical too easily (par complaisance), but it is not so; Libert did not discover in it the so-called *spontaneous* tuberculosis; and Raymond, out of 300 autopsies, had often found verminous cysts, but found only five cases of tuberculosis. Dogs are seldom tuberculous; inoculations by Bollinger and Klebs have not proven less successful. The

cat, no more phthisic than the dog, has been successfully treated by Chauveau and Toussaint. And lastly, if, like Krishaber and Dienufof, one chooses the animal whose constitution, physiological and morbid, resembles most that of man, which is the monkey, it is easily rendered tuberculous, even in the most perfect condition of health.

DEVELOPMENT OF THE INOCULATED TUBERCULOSIS.

1st. *Tuberculizing effects of inoculations.*—Inoculation is practiced in the subcutaneous cellular tissue, in the peritoneum, or in the anterior chamber of the eye. This last method is the neatest and the surest. The inoculation is performed with a fine lancet charged with an almost microscopic tuberculous fragment, or with a Pravaz syringe filled with a dilution of tuberculous matter, or of sputa. Here is what one observed, especially when done in the peritoneum, where the infection takes place most rapidly :

Local Tuberculosis.—A few days after inoculation a local trouble takes place, which does not interfere with general health.

Generalized Tuberculosis.—Then, after a varying length of time, the animal becomes weak, becomes marasmic, and dies after a colliquative diarrhœa, as all phthisics do. At the post-mortem—one observes—besides the local tubercle, already caseous in its nature, small miliary granulations appeared all round the inoculated points. The tuberculous swelling of the glands, and more or less caseiform granulations in the lungs, the intestines, the liver, the spleen, the kidneys and the peritoneum ; this is general tuberculosis.

Inoculability of Artificial Tubercles.—Tuberculosis thus produced is the true, the bacillar kind, as it can easily be inoculated to animals both of the same or of different species, and with certainty during several generations or successive series.

II.—*Counter-proofs and Objections.*—The true character of this experiment has been denied by some ; formal objection has been made, stating that these were merely simple inflammatory nodules, whose appearance simulated tubercles, but whose mode of production was not specific.

Effects of Inert Substances.—Indeed, instead of tuberculous or caseous matter, by comparison, inert substances, charpie, tissue-paper or fragments of cancer were introduced in the peritoneum. The pus of an abscess, fine powder were injected in the veins, and in all these cases, besides local granulations, generalized tuberculoid alterations were obtained. The subcutaneous insertion produced the same effects. In introducing an irritating liquid, like croton oil, or an irritating powder, in the cellular tissue, anatomic processes have been observed, resembling those of tuberculosis; this liquid can even be seen in the giant cells which appear in those inflammatory nodules; and again, by using colored liquids, this can be found in the giant cells.

It seems, then, that tubercle does not act as a virus, but as an ordinary irritant, and that the neoplasm resulting from it resembles all tuberculoids obtained from irritating foreign substances. This is evident in an anatomical point of view, by considering the pathological properties of these products—it is no more than this.

Specific Effects of Tuberculous Substances.—The interesting experiments of Mr. Toussaint, and especially those of Mr. H. Martin, have solved the difficulty in a positive manner: “Tuberculous matter,” says the physiologist, “produces after incubation the formation of a local tubercle, to which succeeds a generalized tuberculosis.” If one inoculates, on the contrary, the matter extracted from the nodules following the injection of foreign substances, it *never* gives rise to a general tuberculosis; it even loses, after the second term of the series, the property of producing a local inflammation. It is, then, the series of the inoculabilities that characterizes the true tubercle; the specificity of the tubercle is thus demonstrated, notwithstanding its anatomic similitude to common irritation; that tuberculous nodules offer the characters of an inflammatory lesion, it imports little; they have their pathognomonic properties in the point of view of their origin and of their serial reproduction.

(*To be continued.*)

FISTULA OF THE COLON FOLLOWING ENTEROTOMY.

BY H. F. JAMES, V.S., St. Louis, Mo.

The occurrence of fistulæ of the rumen in cattle from the use of the trocar or accidental injury, has been observed somewhat frequently; but although enterotomy is performed to a considerable extent on horses in this country, this sequel of the operation, as far as I am aware, has not yet been recorded.

About the middle of January I had a bad case of acute indigestion complicated with congestion of the brain. Performed enterotomy four times on this animal, twice through right flank and twice through the left; by so doing saving my patient from asphyxia. The operation was performed as carefully as was my wont, the trocar was clean and of right calibre and sharpness, and no harm was noticed for some time from the punctures. On recovering from the first sickness, the animal was seized with pneumonia of right lung, and about the eighth or ninth day of the pulmonary complication I was called one night by the watchman and found my patient apparently badly colicked. This suddenly ceased, and I perceived a white colored stream the thickness of my finger running down the right flank from one of the punctures, a fæcal odor becoming very apparent at the same time. The mare was too sick from the lung trouble to stand any irritation at the time, or I would have blistered all around the opening, as we do in salivary fistula, and endeavored to close at once. That it was chyle was very evident, and external manipulation together with probing convinced me that there was no pocket in the abdominal muscles, but that the fistula communicated directly with the bowel. The angle of the puncture, with the flank now in its normal position, was downwards at about 45° , and the fistula was about six or seven inches to the bowel; therefore the chyle, which ran in a continuous stream after the animal had been fed, and saturated both blankets and bedding, had to well up, as I may express it, and the natural tendency of such a channel to heal up quickly seemed in every way likely to me. The mare rapidly regained her usual health and spirits, and in

spite of the loss of chyle began to lay on flesh. Blistered around the opening with the idea of causing enough swelling to close it; budded with hot iron three times, blistering on top of that; tried Squib's flexible collodion to close opening, which had closed considerably since the blistering, &c., but still persisted; not the slightest good. Applied adhesive plaster, same result; silver wire deeply through the edges, with no success. Before each fresh measure was tried I scarified the walls of the fistulous tract as deeply as possible until the blood was drawn, to expose a granulating surface. The patient had now been laid off work for nearly three months, and after these various fruitless attempts, I made up my mind to make a deep incised wound, and trust to an obliteration of the upper part of the tract in the resultant granulation. To run the risk of rupture by laying the fistula open to the bowel was too rash a procedure for any one to undertake, especially as its course through the muscles was of such an extent. Cast animal on near side, and made an oblique incision about five inches in length and one and-a-half inches in depth, in line from the anterior spine of ilium downwards and forwards, opening up the upper part of the tract in incision. Next inserted silver wire sutures, as deeply as possible and very close together, and drew the lips of the wound in firm opposition. Used a large curved needle, similar to the one used on the human perinæum. This operation had the desired effect, and although of course the lower part of the fistulous tract is still in direct communication with the bowel at the time of writing, June 15th, the upper is completely obliterated, and the only thing to be seen of this exceedingly unpleasant and troublesome sequel of enterotomy is a slight scar which shows the line of the incision. I might also state that several medical men saw the case and were greatly interested; they advised pressure, the mild use of nitrate of silver as in the vesico-vaginal fistula of woman, both of which modes of treatment I forgot to say I gave a thorough trial, but they proved of not the slightest avail. Rectal alimentation for several days to give the tract a better chance to heal, by withdrawing the source of irritation, the chyle, suggested itself to me; and if my incision failed in its object, I would have laid it open afresh, and

tried that method. I conceive that a circumscribed peritonitis was set up from one of the punctures, that the bowel became adherent to the abdominal muscles, and that an abscess in those muscles, as the result of the tapping, implicated the coats of the bowel and resulted in its persection. Some of my readers may think that I might have slit it up in the first place and saved all the trouble; so I might, and I would do it now, but then I had no data to work on. Perhaps the recounting of my experiences may save some young practitioner who meets with a similar case from spending much valuable time in modes of treatment which are of no avail in this particular trouble. The conclusions I may fairly arrive at are these:

That fistula of the colon or other bowels may be a sequel of enterotomy in the horse.

That scraping of the walls of the fistulous tract, followed by the use of the firing iron and blistering, the mild application of nitrate of silver, use of pressure by pads and surcingle, painting with flexible collodion, and application of adhesive plasters, are of very little avail in the treatment of this sequel.

That where the fistulous tract communicates directly with the bowel, we are justified in resolving merely the upper part of that tract into an incised wound, and that by securing firm opposition of the lips of the wound we may almost always confidently look forward to a complete obliteration of that portion; thus being practically a cure.

That such cases under treatment should be tied up short and prevented from rubbing the flank or catching tail on sutures; diet should be small in quantity and exclusively grain, and the water restricted.

In cases where this plan of treatment fails in closing up the external opening, rectal alimentation together with similar incision and sutures may accomplish a cure.

I trust my readers will pardon this somewhat long, and perhaps to some, uninteresting article. All practitioners are baffled at times, at least I have yet to see the man who is always equal to the occasion; and so I feel no diffidence about placing my treatment in this case under your scrutiny. I have always held

the opinion that the history of failures is often of even greater service to especially our young practitioners than the triumphant recording of success, with all the failures kept carefully in the background. There is no reason that any one of us should keep these things to himself to escape criticism; they are the property of the profession. Let us have some of the sour as well as the sweet.

EDITORIAL.

THE "REVIEW" PROGRAMME.

In accordance with the original programme accompanying the first issue of our journal, and in order to lay before the veterinarians of our country the record of whatever is valuable and interesting in the progress of the medical sciences, and more especially of such matters as are included in our own department of curative art, we have for several months past given a liberal portion of our space to the reports of the various experiments to which Mr. Pasteur and his assistants have devoted their laboratory, besides giving, on many occasions, translations of the records of the numerous interesting discoveries of Messrs. Chauveau, Tous-saint and other investigators, not forgetting those of our American *confrere*, Dr. Salmon.

It is thus that we have kept our friends informed in reference to the theories and facts of prophylaxy as inaugurated by European practitioners, and applied to the contagious disease of animals, with the magnificent results which have been attained, and the incalculable advantages which have followed, not only to the interests of agriculture, but the higher interests of humanity.

We trust that our endeavors have not been in vain, and though it would be premature to look at present, for the application of the various modes of inoculation in this country, as they have been realized in Europe, we cannot but feel persuaded that at least those of our veterinarians who have kept themselves advised through the publications in question, must derive much personal advantage, in various instances, from their advanced know-

ledge and more enlightened judgment in the course of their professional labors.

Fully satisfied of the importance which attaches to the wide dissemination of a knowledge of these discoveries, we shall continue to pursue the same course in the future, being quite assured that every veterinarian, equally with every physician, entitled to the designation of sanitarian, will fully appreciate the value and wisely avail himself of the benefits of the information placed at his disposal in the columns of the REVIEW.

M. PASTEUR'S RECENT DISCOVERIES.

"At this very moment experiments [upon the prevention of hydrophobia] are under full headway. Biting dogs and bitten dogs fill the laboratory. Without reckoning the hundreds of dogs which within three years have died mad in the laboratory, there is not a case discovered in Paris of which Pasteur is not notified. 'A poodle and a bull-dog [*bouledogue*] in the height of an attack; come!' was a telegram sent to him recently. Pasteur went. The two dogs were rabid '*au dernier point*,' and it was only after some time and no small trouble that they were bound securely to a table. M. Pasteur then bent over the frothing head of the bull-dog, and sucked into a pipette a few drops of saliva. Our author remarks, in conclusion, that Pasteur never appeared to him so great as in the cellar where this took place, and while this '*tete-a-tete formidable*' was being enacted."

These few lines which we extract from the excellent book "Histoire d'un savant par un ignorant," tell more about the work which is being carried on by M. Pasteur, than any one could imagine. It is showing the constant danger to which this wonderful investigator, as well as his assistants, are exposed. But a short time it was the series of researches on anthrax, an affection whose name alone makes one think of certain death; later on it was glanders and now it is rabies. We publish in this issue one of the last communications on that subject, presented to the Academy of Sciences, as is customary for M. Pasteur to do when he desires to have the result of his experiments confirmed by authorities whose verdict is conclusive, wherein he asks for the appointment of a commission to witness and control some of his experiments relating to the prophylaxy and perhaps the curative treatment of hydrophobia. This was granted, the following eminent gentlemen being appointed: Dr. Béclard, Permanent Secretary of

the Academy of Medicine, Professor of Physiology and Dean of the Paris faculty of Medicine; Mr. Paul Bert, Member of the Institute, Professor of General Physiology at the Faculty of Sciences of Paris; Mr. H. Bouley, Member of the Institute and of the Academy of Medicine, Professor of Comparative Pathology at the Museum of Natural History; Dr. Villemin, Member of the Academy of Medicine, Professor of Clinical Medicine at the Military School of Medicine and Pharmacy of Paris; Dr. Vulpeau, Member of the Institute and of the Academy of Medicine, Professor of Comparative and Experimental Pathology at the Faculty of Medicine of Paris; Mr. Tisserand, Director of the University of Agriculture.

What the results may be is difficult to say; but no doubt all who claim an interest in sanitary science at least will watch them with anxiety. If Mr. Pasteur can render dogs refractory to any inoculation of rabid virus, what a giant step forward will it be in the history of the prophylaxy of the disease! If Mr. Pasteur can prove the prevention of the appearance of the disease as results from the bite of a mad dog through a series of inoculations, the grand problem of its curability will no more be a doubt, and the world at large will recognize the grandeur of the great French chemist. Then probably we will never read any more opinions like those which were expressed lately by a member of the Royal College of Veterinary Surgeons, and also by one of the officers of the State Board of Health, who had the shameful courage to treat the announcement of the possible curability of rabies as *absurd* and all *gammon*.

SANITARY STATEMENTS AGAIN.

In our last issue we asked our readers to send us information from which we could form quite a reliable statement of the existence of contagious disease in the various parts of the country; and to assist our friends in sending the desired information we had placed in the REVIEW a printed table which could be filled in a short time and would be of great use to us, having a space left for suggestions and remarks as to the project in view. Since the call

has been made we have received a number of responses, and among them one from Winnipeg, Manitoba, where Mr. A. Bund, V.S., not only kindly promises to send the statement for each trimester, but also forwarded the regulations of the Veterinary Sanitary Service, an excellent pamphlet where all duties of the veterinarian are well laid out. And while we here offer our thanks to those who have returned the tables well filled, we would once more call upon those who have not done so and remind them that our professional value and interests are sought to be promoted by this work, besides the importance that the publication of such documents may have in obtaining better laws for the regulation of veterinary sanitary medicine in the United States.

VETERINARY INSPECTORS.

In our April issue we acknowledged the receipt of the new regulations for admission to the civil service of the Department of Health of the City of Brooklyn, under which none but regular graduates of veterinary medicine could be appointed to positions in said department. To-day we can announce that the first examinations of candidates for appointment as assistant inspector has taken place before a board consisting of R. M. Wyckoff, M.D., W. E. Griffiths, M.D., J. Corbin, M.D., L. N. Fisk, M.D., and A. Liautard, M.D., V.S., in a written, oral and practical examination. Four candidates presented themselves at the competition, and Drs. R. McLean and W. H. Hornblower received the appointment.

REGISTER OF GRADUATES OF VETERINARY MEDICINE.

ALUMNI OF THE MONTREAL VETERINARY COLLEGE.

Continuing the list of regular members of the profession which we inaugurated in our last issue, we give to-day the list of the alumni of the Montreal Veterinary College, kindly sent to us by the Principal, Dr. D. McEachran. As soon as those of other institutions shall have been secured, we will present them to our friends, as also those that may be sent us of European graduates.

In this list the graduates that are practicing in the United States, so far as we know, are given in italics :

Alloway, C. J.....	Montreal.....	1869
Audrain, H.....	do	1879
Ball, E. P.....	Stanstead.....	1884
Baker, M. C.....	Montreal.....	1879
<i>Baker, Austin*</i>	Chicago, Ill., U.S.....	1876
Baneroft, C. D.....	Knowlton, P.Q.....	1884
Bell, Wm.....	Kars, Ont.....	1883
Bergeron, L. H.....	Bord-à-Plouffe, P.Q.....	1881
Bergevin, Hector.....	St. Timothé, P.Q.....	1879
Bisaillon, Hilaire.....	St. Valentin, P.Q.....	1881
Blackwood, Thos	Boston, Mass., U.S.....	1876
<i>Brodie, Jas</i>	Bloomington, Ill., U.S.....	1883
<i>Brown, D. S</i>	Roseoe, Ill., U.S.....	1877
Brown, M. S.....	Montreal.....	1880
Bruneau, O.....	do	1872
<i>Bryden, Williamson</i>	Boston, Mass., U.S.....	1871
Campbell, D. E. P.....	St. Hilaire, P.Q.....	1882
<i>Carter, E. J*</i>	Pittsburgh, Pa., U.S.....	1881
Chandler, A. J.....	Montreal.....	1882
<i>Clément, A. W</i>	Lawrence, Mass., U.S.....	1883
Couture, J. A.....	Quebec.....	1873
<i>Cressy, Noah, M. D. Phd</i>	Amherst, Mass., U.S.....	1878
Cross, A. F.....	River Beaudette.....	1884
Crevier, E. C.....	Peterboro, Ont.....	1883
Crundall, E.....	Geneva, N.Y., U. S.....	1884
Chevalier, J. B.....	Montreal.....	1873
Cummins, P.....	Quebec.....	1880
Daubigny, V. T.....	Laehenaie, P.Q.....	1879
Drouin, C.....	Montreal.....	1884
<i>Duncan, J. A*</i>	Boston, Mass., U.S.....	1876
Farley, O. C.....	Duncanville, Ont.....	1884
Ferries, James.....	Beaverley, Ont.....	1869
<i>Fogg, J. C</i>	Boston, Mass., U.S.....	1876
Fraser, J.....	Yorkshire, England.....	1869
Gadbois, O.....	Terrebonne, P.Q.....	1882
<i>Glass, Alex</i>	Philadelphia, Pa., U.S.....	1882
Hall, W. B.....	Quebec.....	1877
Harris, A. W.....	Ottawa, Ont.....	1880
Hébert, Serville.....	St. John, P.Q.....	1877
<i>Henry, J</i>	Fall River, Mass., U. S.....	
<i>Hinkley, N. P</i>	Buffalo, N.Y., U. S.....	1880
Jakeman, William	Halifax, N.S.....	1880
Labelle, P. F.....	Ste. Dorothée, P.Q.....	1882
Labelle, Jos.....	Ste. Rose.....	1884

* Medallist. † Deceased.

Levesque, Chas.....	Berthier (Upper).....	1871
Levesque, Alphonse.....	Montreal.....	1879
Lemay, D.....	Baltimore, Md., U.S.....	1879
Lyford, Chas. C., M.D., B.S.....	Minneapolis, Minn., U.S.....	1877
Maisonneuve, O.....	Terrebonne, P.Q.....	1882
Mears, A. W.....	Chicago, Ill., U.S.....	1884
Milloy, John.....	Boston, Mass., U.S.....	1877
Murphy, William A† ..	Cambridge, Mass., U.S.....	1877
Miles, I. J.....	Charleston, Ill., U.S.....	1879
Morin, C*.....	St. Albans, Vt., U. S.....	1884
MacCormack, A.....	Ormstown, P.Q.....	1873
MacLaughlin, James.....	West Newton, Mass., U.S.....	1877
McEachran, Wm., M.D.C.M*.....	Winnepeg, Man.....	1880
McEachran, Chas.....	Montreal.....	1884
McLennan, F. W.....	Bridgeport, Conn., U.S.....	1878
McMartin, H. J.....	Potsdam, N.Y., U.S.....	1879
O'Connell, T. J.....	Salem, Mass., U.S.....	1883
Ormond, Chas. H.....	Milwaukee, Wis., U.S.....	1881
Pagé, Joseph.....	Lotbinière, P.Q.....	1880
Patterson, Wm., M.R.C.V.S.	Montreal.....	1869
Paquin, Fred.....	St. Andrews, P.Q.....	1883
Paquin, Paul.....	Jackson, Mich., U. S.....	1883
Pomero, B. A.....	Compton, P.Q.....	1883
Price, Richard.....	St. Paul, Minn., U.S.....	1881
Pierce, Benj. D.....	Springfield, Mass., U.S.....	1881
Privé, P., M.D.....	Terrebonne, P.Q.....	1873
Prévost, Vital.....	Sherbrooke, P.Q.....	1876
Robins, W. P.....	Hochelaga, P.Q.....	1883
Robinson, C. B.....	Wheeling, West Virginia, U.S.....	1882
Ryan, John.....	Chicago, Ill., U.S.....	1877
Skally, J. M.....	Boston, Mass., U.S.....	1882
Thomas, F.S., M.D.....	Hanson, Mass., U.S.....	1879
Torrance, Fred., B.A.....	Brandon, Man.....	1882
Trudel, N. Albert.....	Three Rivers, P.Q.....	1881
Wardle, Walter.....	Montreal.....	1882
Winslow, Charles.....	Rockland, Mass., U.S.....	1879
Williams, W. L.....	Bloomington, Ill., U.S.....	1879

EXPERIMENTAL PATHOLOGY.

ATTENUATION OF VIRUS OF RABIES.

Paper presented by Messrs. Pasteur, Chamberland and Roux.

The great fact of the varying powers of some viruses, and the preservation of the virulency by another of less power, is to-day

* Medallist. † Deceased.

not only accepted by science, but even admitted in practice. With such a direction for our investigations we can appreciate all the interest attached to the researches into the methods of attenuation applied to new viruses.

On this occasion I report a step of progress in that direction in relation to rabies.

1. If we pass from the dog to the monkey, and again from monkey to monkey, we may observe that the virulency of the rabid virus diminished as it passed to each animal successively. When the virulency has been diminished by successive transmissions from monkey to monkey, if the virus is again carried back to the dog, the rabbit or the guinea pig, it still remains attenuated. In other words, the virulency does not return at once to that of the dog with *street rabies*.

In these conditions the attenuation may be easily brought by a small number of passages from one monkey to another to such a point that it cannot communicate rabies to the dog by hypodermic injection. Inoculation by trephining, so positively reliable for the development of rabies, cannot even produce the slightest result, though it renders the animal refractory to the disease.

2. The virulency of rabies virus increases when passing from rabbit to rabbit, or from one guinea pig to another. When the virulency is increased and fixed at its maximum in the rabbit, it passes with its increased power to the dog, and shows itself there stronger than that of the dog affected with *street rabies*. This virulency is such in those conditions that the virus which possesses it when inoculated into the circulatory system of the dog gives him with certainty a fatal rabies.

3. Though the rabid virulency in the passage from rabbit to rabbit, or from one guinea pig to another, several passages are necessary through the bodies of those animals to enable it to recuperate its former condition of strongest virulency after it has been first diminished in the monkey. And again, the virulency of the dog with *street rabies*, which, as I have just remarked, is not at its maximum strength, requires when carried on the rabbit, several passages through individuals of that species, before reaching its maximum strength.

A practical application of the results I have just mentioned enables us easily to render dogs refractory to rabies. Indeed, we can easily understand how the person who experiments may have at his disposal rabid viruses attenuated to various degrees of strength; some not deadly, to protect the economy from the effects of more active viruses, and those from deadly viruses.

Let us take an example: The rabid virus of a rabbit, dead from trephining, after an incubative stage lasting several days beyond the shortest incubation in the rabbit, is taken. The incubative stage is generally of seven to eight days' duration after inoculation by trephining the most virulent virus. This virus of rabbit with a longer incubative stage, is inoculated (always by trephining) to a second rabbit, and the virus of this to a third. At each time, these viruses which become stronger and stronger, are inoculated to a dog. This animal is then able to resist a deadly virus and becomes entirely refractory to rabies, whether by intra-venous inoculation, or by trephining with the virus of a dog with *street rabies*.

By inoculation of the blood of rabid animals, in given circumstances, I have succeeded in considerably simplifying the operations of vaccination, and to give to the dog the most marked and refractory condition I will soon make known the whole of the requirements relating to this.

It would be of immense interest both now and until the far distant period of the extinction of rabies by vaccination, to be able to prevent the development of this affection after the bites of rabid dogs. On this point the first experiments I have made give me the greatest hopes of success. Thanks to the duration of the incubation of rabies after bites, I am justified in believing that we can certainly induce a subject with refractory power before the deadly affection makes its appearance as a consequence of the bite.

Though the first experiments are strongly in favor of this view, yet many more are required upon various species of animals before human therapeutics can reach the audacity of attempting the prophylaxy upon man.

It will easily be understood that notwithstanding the faith I

have acquired from the numerous experiments made during the past four years, it is not without apprehension that I publish to-day these facts, which show nothing else but a possible prophylaxy of rabies. If I had had at my disposal sufficient material means, I would have been happy to make this communication only after having asked from some of my confreres of the Academy of Sciences, and of the Academy of Medicine, to confirm the conclusions I have made known just now.

It is in obedience to these motives and to this hesitation that I have taken the liberty to write to Mr. Fallieres, the Secretary of Public Institutions, asking him to name a commission to whom I could submit my dogs refractory to rabies.

The master experiment that I would first attempt would consist in taking from my kennel 20 refractory dogs, which would be compared to 20 other dogs as witnesses. All these forty dogs would be made to be bitten by rabid dogs. If the facts I have mentioned are correct the 20 dogs considered by me as refractory would all resist, while the 20 witnesses would become rabid.

A second experiment not less conclusive would consist in taking 40 dogs, 20 vaccinated before the commission and 20 unvaccinated as witnesses. The 40 animals will be afterwards trephined with the virus of dogs with *street rabies*. The 20 vaccinated dogs will resist while the 20 others will all die of either paralytic or rabid hydrophobia.—*Revue Scientifique*.

AMERICAN VETERINARY COLLEGE.

HOSPITAL RECORDS.

SARCOMATOUS TUMOR OF THE MAXILLARY SPACE.

By F. S. ALLEN, B.S., D.V.S., House Surgeon.

The patient is a black gelding, about seven years old, the property of a Brooklyn physician. He was brought to the hospital on the second of May, for treatment for a tumor stated to be of about one year's growth; of small dimensions at first, but latterly increasing in size, until at the present time it has assumed very considerable proportions; the horse, however, being in other re-

spects in fine health. The tumor occupies the maxillary space, towards the anterior portion. It is of an elongated form, and nearly fills the entire space. It is not adherent to the bone, but is surrounded with infiltrated tissue, and somewhat movable. It is not painful, the animal making no resistance when it is examined. It does not seem to interfere with mastication, and examination by the mouth fails to reveal any interference with that cavity.

It is found by reference to the clinic book of the hospital that the horse had once before been brought for examination, but, as is shown by the history, was not subjected to treatment, the growth being then quite small and causing no inconvenience at that time.

On the 5th of May the patient was prepared for operation, an ounce of chloral-hydrate being administered, and he was cast on his left side. An incision was made on one side of the median line, but over nearly the middle of the growth, the entire length being about six inches, the skin being carefully dissected over the whole tumor, the cellular tissue being separated with the handle of the knife and the finger. The tumor was thus enucleated, though not without involving the division of some of the muscular fibres of the anterior appendix of the hyoid bone. The cavity was then filled with oakum, saturated with carbolic solution, the edges being approximated by trimming, and three sutures were applied to keep the parts in place.

The animal was then permitted to get on his feet, and was turned loose in a box stall. He was afterwards tied up, however, to prevent him from rubbing his head.

The next day the parts looked well. The oakum was removed, and a dressing of carbolic solution was prescribed and applied several times a day. On the 11th the granulations of the edges were cauterized with nitrate of silver and chloride of zinc, and from that date an ordinary dressing was kept on until the 14th, when he was discharged and returned to his work.

When removed the tumor weighed about eight ounces. It was somewhat irregular and lobulated in form, but seemed to be well defined on its outside surface. On section, it presented the

appearance of a lardaceous tumor, of a yellow-whitish color, with spots here and there much resembling a lymphatic gland. Examined by Dr. T. A. Stenrer, lecturer on Surgical Pathology at the College, he reported it to be a small spindle-celled sarcoma, which, he said, probably originated from the lymphatic glands of that region.

Throughout the entire treatment the animal showed no reactive fever; his pulse and temperature remained normal, and his appetite was unimpaired.

HYPERTROPHY OF THE LYMPHATIC GLANDS OF THE INTER-MAXILLARY SPACE IN A STALLION.

BY THE SAME.

This case is to a great extent a repetition of the one preceding. The subject was a black stallion, four years old. The growth was very similar to that of the previous case, though smaller. It had, also, numerous fistulous tracts, some of which seemed to run in the direction of the root of the third molar tooth. The growth, however, was hard, and there was an escape of pus through the fistulous tracts. It was not painful, and according to the report of the owner, had been present about three months. It had at various times been poulticed, blistered and tapped, but without producing any change. It was not very large, was elongated in shape, and seemed neither to grow nor diminish under any treatment.

On examination by the mouth, the third lower molar tooth of the right side was found to be very small and atrophied. It seemed diseased, and at first it was suspected that the two diseased processes might be connected, and that the removal of the tumor would have to be followed by the extraction of the tooth. This, however, did not prove to be the case, as when the tumor was removed no connection with the tooth could be discovered.

On the 14th of May, two days after admission, the animal being prepared and chloralized, was thrown, and the operation conducted in the same manner as in the first case: an incision upon the length of the tumor; dissection of the skin; isolation

and enucleation of the tumor, which was rendered difficult by the presence of numerous bands connecting it with the surrounding tissues. After the principal mass was removed, and a number of smaller tumors, hard and injected, had been carefully dissected out, and when the parts seemed to be entirely free from abnormal growths, the edges of the skin were brought together by stitches, and a dressing of iodo-phenol directed to be applied several times a day. This treatment was maintained, with slight variations, as required by external indications, until the 27th, when the horse was returned to his owner.

When removed, the tumor weighed four ounces. Microscopic examination showed it to have been originally lobulated, with hollows at intervals, and at points containing small abscesses. It proved to be a lymphatic gland in a hypertrophied condition, and undergoing an irregular process of degeneration.

This question may present itself, whether this would not also have proved to be a sarcomatous tumor if it had been left undisturbed, instead of being irritated and interfered with by the treatment to which it had been subjected.

REPORTS OF CASES.

LUXATION OF THE CARPO-METACARPEL ARTICULATION.

BY C. H. FLYNN, D.V.M.

On May 23rd I was hastily called to attend a two year old entire colt owned by a Mr. Scott. On arriving found the history of the case as follows:

The colt had been tied to a tree in the yard and left for the night. During the night a mare in heat broke from her pasture and got with him. When found in the morning he was down, tangled in his halter, his off fore limb flexed and much swollen in the carpal region.

Before I arrived attempts had been made to reduce the luxation but without success.

Upon examination I found the lesion to be in the carpo-metacarpel articulation. The metacarpal bones had slipped outward

till the articulating surface of the head of the outer splint bone could be distinctly felt, also the lower surfaces of the magnum and trapejoides.

Having determined the conditions present I clasped both hands around the joint, locked my fingers and pressed my palms forcibly on the laterel aspects of the joint. Immediately there was a snap and the animal extended the limb and took a few steps on it.

I now constructed a sling and placed him in it. We made him as comfortable as we could and I gave orders to keep the inflamed parts well irrigated with cold water.

The animal has been kept on cut grass, is out of the sling and is apparently all right, but we will not allow him to run at large till we are confident he is strong.

The colt is not of a loose conformation but has well knit joints and must have required a considerable force to have produced the lesion.

This case was of interest to me, never having known of a luxation in this region. Should like to know if they do occur often.

REVIEW.

LA NATURE VIVANTE DE LA CONTAGION. COUTAGIOSITÉ DE LA TUBERCULOSE.

By H. BOULEY, MEMBRE DE L'INSTITUT.

This magnificent work may be denominated a continuation of a former work published two years ago by Mr. Bouley, as a resumé of his lectures on comparative pathology, delivered at the Museum of Natrual History in Paris. This excellent work is composed in the elegant style which characterises all the writings of Mr. Bouley. It is divided into sixteen lectures, in which the author lays before his readers, not only the importance and the value of the results of experimental pathology, but principally and specially the true nature of contagion—*la nature vivante*. In the course of his interesting pages the author ably illustrates the steps by which the *epine irritante*, the

irritating cause, has now become thoroughly known and is still becoming familiar to us as the developing and growing microbe, as it presents itself under its various forms of micrococcus or bacillus, until it brings us down to the true nature of the contagiousity of tuberculosis, and shows the modes by which certain metastatic abscesses and other visceral lesions are the uniform and legitimate product of specific elements. The work is completed by an appendix introducing some interesting remarks upon the report of Messrs. Lydtin, Fleming and Van Hersten upon the same subject, with suggestions in reference to the treatment and prophylaxy of this disease.

Mr. Bouley is already too well known in the profession, and his voluminous writings justly appreciated by all French readers, medical as well as veterinary, both students and practitioners, to need further remark at our hands. In these lectures the learned gentleman has once more demonstrated to the world of savants the eminent justness of his claims to the distinguished honor recently conferred upon him in calling him to the Presidency of the Academie des Sciences of Paris.

DISEASES OF THE EAR.

By PROF. O. D. POMEROY, M.D.

Even in this our day of constantly increasing English veterinary literature, the veterinary specialist, while finding pleasure and instruction in the study of the literature exclusively adapted to his own use, is often at a loss to know where to look for the information he desires, and is compelled by the absence of special treatises on various branches of veterinary medicine and surgery to fall back on the works of specialists in human medicine. Among these the above-named work will be found an eligible one for the use of the veterinarian. And while it is true that diseases of the ear are but seldom encountered in veterinary practice, he may still find among its contents a large amount of information of which he may find occasion to avail himself in the treatment of the lower classes of animals. We strongly recommend the work to those of our friends whose canine practice may bring before them patients suffering with diseases of the ear.

HEREDITY AND CONTAGION IN THE PROPAGATION OF TUBERCULOSIS, AND THE PREVENTION OF INJURIOUS EFFECTS FROM CONSUMPTION OF THE FLESH AND MILK OF TUBERCULOUS ANIMALS.

By A. LYDTIN, Carlsruhe, Veterinary Adviser to the Baden Government; G. FLEMING, LL.D., F.R.C.V.S., Principal Veterinary Surgeon to the British Army, and M. VAN HERSTEN, Veterinary Surgeon and Chief Inspector of the Brussels Abattoir.

The issue of this report will prove to the veterinary profession one of the most important of those recently published in relation to the disease named. It is a translation of the report presented to the Fourth International Veterinary Congress, held in September last at Brussels, and brings the entire history, with all the newly-discovered facts relating to tuberculosis, down to our own day. It is a valuable compend of the scientific knowledge of the disease, and shows on the part of the authors a great amount of difficult researches, of close observation and of personal experiments, all of which are made to contribute to the solution of the important problem of the prevention of the effects resulting from the conversion into food of the flesh and milk of tuberculous animals. As the question was not discussed at the last Congress, but was postponed to the next, the precautions which are recommended could not be definitely agreed upon. But it is nevertheless equally full of interest to the sanitary veterinarians now engaged in the duties of meat inspection.

The book is neatly printed, and makes a handy octavo of 175 pages. The report proper is supplemented by a short discussion of the subject, which occurred on the last day of the International Congress.

HORSES—THEIR FEED AND THEIR FEET.

By C. E. PAGE, M.D.

This volume claims to point out the true source of Malaria, Disease Waves, Influenza, Glanders, Pinkeye, etc. This title is certainly sufficiently suggestive and taking to tempt every one interested in the diseases referred to to buy and read the book; the more so, when he has the promise added of instruc-

tions *how to prevent and counteract them*. But great will be the disappointment suffered by the reader who masters the first hundred pages of the work. No doubt, there are some very interesting items of advice given, such as the observations on foul air in the stable and the improper feeding, all of which will probably pay the reader for the time he may devote to the book. The most serious and probably the most valuable point in the design of the author is to establish the fact that horses will do better on two meals a day than on three, and will do better on food proportionate to their work ; and there are other equally judicious suggestions, connected with some sound and proper hygienic remarks. It is to be regretted that the author has not limited himself to these special points, and should not have found better reason for his new mode of feeding than to refer us to what he calls the veterinary practice of to-day, where he relates the history of a case most ignorantly treated by a person quite unworthy of the title which the author so generously gives him. The days of ignorance in veterinary medicine are gone by, and cases of laminitis are no longer treated by bleeding, inflating the shoulders, blistering the entire chest, purging, etc., etc. In the second part of the book, theories and facts in favor of the employment of unshod horses for all kinds of work are reprinted from the pen of Sir George Cox and Col. M. C. Weld.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular montly meeting of the New York State Veterinary Society was held at the American Veterinary College on Tuesday, June 10th, 1884, at 8 p. m. The President, Dr. Liautard, in the chair.

Members present, were: Drs. Liautard, Robertson, Duane, Burden, Dixon, Burget, Bath, Charum, Allen, Pendry, Ryder and Kay.

On motion, minutes of the two previous meetings were read and adopted.

Dr. Robertson then favored the Society with a very interesting paper on

ELEPHANTIASIS OF THE WITHERS.

A roan horse 6 year old was admitted April 12th, 1884, with a previous history of a tumor appearing on the top of the withers. This dated some three months before admission. It had not, however, prevented the animal doing his usual work until about the 10th of the month. The swelling commenced in the region of the first dorsal vertebra, extended backwards to the eighth or ninth, and from the base of the scapula on the left side up to and over the median line; the tumor was well defined, movable fully six inches above the surrounding tissue; the skin upon the shoulder was thickened, full of wrinkles and partly denuded of hair; there was a feeling of fluctuation, and on the 13th of April, Dr. Burget punctured the swelling. There was difficulty in penetrating the skin on account of its thickness. About a quart of reddish fluid escaped through the trocar. The opening being enlarged, a small body, hard, white, the size of a bean, was washed from the interior, followed by others larger but of the same appearance. They were separate, capsulated, having the appearance of fibrous tissue; they numbered twenty, the largest measuring four inches in length, one and a half inches broad, and one inch thick. Besides these separate growths there was a collar of thickened connective tissue extending from the seventh dorsal vertebra on the left side to the first, then over the spinal column to the right side, then backwards to the seventh. It was fringed with growths, the inner edge was loose, smooth, the outer attached to the subcutaneous tissue. Attempts were made on different occasions to dissect this tissue from its attachments; large portions were removed but some remained on the right side. The parts after the fifth day became so swollen that surgical interference was necessary. The patient lost his appetite, temperature became above the normal, symptoms of septicæmia set in, which condition caused his death on April 23d.

During the progress of the case the question was frequently asked, What is the diagnosis? The condition was an unique one and we were at last compelled to call it a case of elephantiasis. In veterinary literature this name is applied to thickening of the

skin and subcutaneous connective tissue of the hind extremities, resulting as a rule from repeated attacks of lymphangitis and cellulitis. According to Robertson the skin becomes thickened, hardened and more difficult to move on the subcutaneous tissue; it is dry and coriaceous, occasionally scaly, and falls into folds and fissures, which, in cases of long standing, may chap and suppurate. This thickening of dermal and subdermal parts after a time causes much alteration of the limb and deformity, with impaired power of motion. According to pathologists elephantiasis should be considered as a disease coming under the head of connective tissue tumor or fibroma. Coates, in his recent work, describes elephantiasis arabum as a localized thickening of the skin, beginning in attacks resembling erysipelas, at first passing off and then recurring. There is finally a permanent progressive and apparently unaccountable new formation of connective tissue, and so the characters of a tumor are assumed. The tissue produced is a loose succulent connective tissue like that of the skin, but containing more cells, and so more like inflammatory tissue. The epidermis is also thickened, so that the whole partakes of the character of an exaggerated hypertrophy of the skin. The new formation may extend inwards to the fascial, the intermuscular tissue, and even to the periosteum, inducing thickening of the bone. The disease is frequently regarded as taking place in the lymphatics. This view is supported by the fact that the new formed tissue is generally very succulent, as if the spaces were overfilled with lymph, and there are sometimes dilated lymphatics visible in the hypertrophied skin.

Virchow, in his "Pathologie des Tumeurs" says that several names have been proposed for the elephantiasis of the Arabs.

Fuchs called it pachydermia, but elephantiasis is far from a simple thickening of the skin; it is an affection which extends much more deeply.

Mason Good employed the name of bucnemia.

Kampfer gave it that of hypersarcosis. Elephantiasis commences with inflammatory prodroma, which have generally the character of erysipelas; that is to say, they commence generally by an attack of fever, which extends rapidly beyond the primi-

tive point of appearance, accompanied by a slightly intense redness of the skin, with a deeper swelling hard œdematous of the parts. We explain this swelling in remembering that the lymphatic apparatus generally participates early in the diseased process. We see in the direction of the lymphatic vessels appear red streaks, hot, sensible, often hard. Lymphatic glands in the region where the disease is seated undergo an acute considerable tumefaction; if one cuts the swollen part, there escapes spontaneously or by a slight pressure a clear, yellowish liquid, which a little while after expression spontaneously coagulates. It is a liquid analogous to that we know as lymph, a fibrogenous liquid which does not coagulate, but remains liquid as long as it is enclosed in the interior parts, away from the contact with atmospheric air. We can explain in two ways how this substance accumulates in large quantities: at first it is produced in the tissues by the inflammatory process, it transforms a greater quantity of other material in fibrinogenetic substance; then that substance which in the normal condition should be withdrawn as an element of the lymph, remains in the parts, since all currents cease in the lymphatic vessels. This is explained by the swelling of the lymphatic glands produced by an increase of the cellular elements.

In the discussion that followed, and in answer to a question as to the formation of a line between lymphangitis, cellulitis and elephantiasis, said the two former were, as a rule, acute, and generally could be removed, which was not the case with the latter; yet admitted that it at times followed lymphangitis. Dr. Liautard agreed with this, and said he did not believe that true elephantiasis of the hind legs was so common as generally supposed.

After passing a vote of thanks to the essayist, the meeting went into executive session.

The Board of Censors reported in favor of the applications for membership of N. E. Cuff and L. James, V. S., who were duly elected.

On motion, meeting adjourned till second Tuesday in September, Dr. Charum being appointed essayist for the evening.

W. H. PENDRY, *Sec.*

CORRESPONDENCE.

A CUT-AND-DRIED STATE ASSOCIATION.

To the Editor of the American Veterinary Review :

In my letter published in the June number of the *REVIEW* I gave the history of the course pursued by the *U. S. V. Journal* in forming the present State of Missouri Veterinary Medical Association. As a result of their action, Dr. Slattery, M.R.C.V.S., of this city, wrote to the editor of the *Journal* withdrawing his card from that paper. We feel justified in laying Mr. Daniels' answer to Dr. Slattery before the profession, and in commenting upon the same :

"DEAR SIR—Yours of the 9th to hand. We are sorry to have offended you. The call for a State convention was an invitation to you and your friends to be present. I never claimed to know qualified men, and it was your place to be there and look after the interests of your high calling.

"The error was one of the head, not heart.

"Hoping you may reconsider your request and leave your ad. in, I remain,

"Very truly,

T. E. DANIELS."

To commence: Did the *U. S. V. J.* think that the regulars of St. Louis entertained so little an idea of the respect due to their profession as to gather at a convention in response to a call made by a number of ignorant quacks? By recognizing the validity of the call we would have reduced ourselves to their level, and therefore we held aloof. As to never knowing who the qualified men in St. Louis were, I beg leave to reiterate the statement in my first letter, that Dr. Slattery and myself expressly informed Mr. Smith on this point, which summarily disposes of this extenuation. We also differ with Mr. Daniels' authoritative statement that it was our place to be present and look after the interests of our high calling. To have the convention thrust upon us with such an array of signatures, after our unanimous expression of opinion that the time was not yet ripe for the formation of an association; to have that opinion set aside as of not the slightest consequence in comparison with the pecuniary inter-

ests of the *U. S. V. J.*, and then to tell us it was our place to be present and look after our interests—this is about the coolest thing we have heard of for some time. Mr. Daniels came down from Chicago to organize the association; why did he not call upon any of us and find out why Mr. Smith had failed in his mission? I will supply the answer, which the readers of the *REVIEW* have doubtless arrived at in their own minds ere now: Because the thing was cut and dried; the association had to be formed, graduates or no graduates; the *Journal* had to have more subscribers and more advertisers. The fruit of the “Missouri Mission” was to be seen in the last issue of the paper in question, in which my friend Slattery’s card is hemmed in by a perfect horde of St. Louis quacks! So much for Mr. Daniels’ explanatory letter.

Another point which should be carefully considered by the profession is the national legislation proposed by Dr. Plageman. Section 1 of the “Act to regulate the practice of veterinary medicine and surgery” runs as follows: “That no person shall be permitted to practice as a veterinary surgeon, either by prescribing for or treating any domestic animal for any disease, injury or ailment, or performing any operation, without having obtained a diploma from a college authorized to graduate students in veterinary medicine and surgery, *or is a recognized member of a State Association, or is a licentiate of same, and has passed a satisfactory examination before a board appointed for the purpose, and for which he shall hold a certificate or license.*”

The italics are mine.

Now, as to no man being allowed to practice for fees without being a graduate of a recognized school, that is very well and good, but the remainder of Section 1, in my eyes, constitutes a great danger to the profession, and virtually amounts to a usurpation of the diploma-giving prerogative of the schools, and the vesting of the same in a number of associations strongly tainted with the empirical element. Numbers will avail themselves of this back-door entrance to the profession, for they will reason that if a State association membership or license entitles them to legal recognition and can be obtained with comparatively little trouble, why go to college and be under the expense attendant on

a regular course? This part of the act, if passed, would be a dangerous weapon in the hands of our natural enemies, to be used unsparingly against us. Take the present State Association of Missouri, which is composed exclusively of quacks; what reliance could be placed on its members, or on such men as it pleased their whim to license? Not the slightest. The recognized veterinary colleges should have the *sole* power of granting diplomas. Any such division of power as is proposed by the act cannot but be prejudicial in the extreme to our interests. The sudden and fast increase of State Association licentiates, which would inevitably follow the passage of such an act—men who would be *legally* qualified, whose evidence would be as good as a graduate's in a court of law—should be looked at as a serious matter. I condemn the latter part of Section 1 as especially unjust in its bearings to the younger members of the profession, who, after pursuing an expensive course, will find themselves, when fully fledged, regarded by the public as on about the same footing as the licentiates. We may say that merit will always come to the front in time, but even deserving men have to struggle hard frequently to build up a practice, and they should not be handicapped by such unjust competition as we are likely to have. The rest of the proposed act will probably meet with the support of the body of the profession. We wonder who the Missouri representative (?) of the profession to the National V. M. Association meeting in Chicago next November will be?

Nothing I have written is from personal motives; it is merely the outcome of an honest and sincere desire to see the interests of the profession advanced as they should be, and I hope the stand I have taken on the present state of veterinary affairs in this country meets with the approval of my professional brethren.

H. F. JAMES, V.S.,
St. Louis, Mo.

NOTICE.

We are pleased to call the attention of our readers to the advertisement of the Wilson Safety Manger as one of the best

means by which horses can be made to eat slow, and thus prevent the repeated attacks of indigestion to which greedy eaters are subject. We have had opportunity to try them, and have obtained excellent results from their use.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Gazette Medicale, Revue Scientifique, Revue d'Hygiene, Revue fur Thierheilkunde und Thierzucht, Annals de Belgique, Archives Veterinaires, Presse Veterinaire, Recueil de Medecine Veterinaire, Clinica Veterinaria, Veterinarian, Veterinary Journal, Revue Dosimetrique, Giornale di Anatomie Fisical and Pathological degli Animali, Schweizer-Archiv fur Thierheilkunde, Journal de Zootechnie.

HOME.—Scientific American, Live Stock Journal, American Agriculturist, Country Gentlemen, Breeders' Gazette, Spirit of the Times, Turf, Field and Farm, Medical Record, New York Medical Journal, Journal of Comparative Medicine and Surgery.

JOURNALS.—Maine Farmer, Farmer's Review, Journal of Agriculture, Ohio Farmer, Practical Farmer, Prairie Farmer, Western Rural, American Farmer, &c., &c.

BOOKS AND PAMPHLETS.—A plea for the cure of Rupture, by J. H. Warren, A.M., M.D; Uber Wesen und Behandlung des Sogen Hufkrebses, by Prof. Dr. Putz of Halle; Uber Hufkrebs und Strahlfaule, by the same; Annual Report of the Board of Health of New Jersey; Proceedings of the second annual session of the Texas Live Stock Association; 43d Report of the New York State Agricultural Society; Report of the United States Treasury Cattle Commission for the year 1883; Constitution and Code of Ethics of the Massachusetts Veterinary Association; 12th Report of the Zoological Society of Philadelphia; Report of the Minister of Agriculture of Canada; 6th Annual Report of State Board of Health, Rhode Island.

COMMUNICATIONS.—H. F. James, T. S. Allen, C. H. Flynn, W. H. Pendry, E. F. Thayer, Acton Bund, C. H. Peabody, J. F. Winchester, W. A. Thomas, T. S. Very, A. J. Murray, R. Laidlaw.

AMERICAN VETERINARY REVIEW,

AUGUST, 1884.

ORIGINAL ARTICLES.

REPORT ON THE RECENT CATTLE DISEASE IN KANSAS.

BY PROF. JAMES LAW, of Cornell University.

Hon. H. F. French, Assistant Secretary, United States Treasury:

SIR:—I have the honor to submit the following report on the disease of cattle which has recently prevailed at certain points in the States of Kansas and Illinois, and which was erroneously announced to be the *foot and mouth disease* of the Old World.

The first report of the disease was on March 3, in a telegram sent from Neosho Falls, Woodson County, Kansas, by Lieutenant-Governor Finney, to apprise Governor Glick that “the foot and mouth disease was prevailing to an alarming extent in that vicinity.”

A company from Emporia, consisting of three cattle-raisers and a veterinarian, at once visited the Neosho district and pronounced the malady to be unquestionably the *foot and mouth disease*. The day following the Governor conveyed Dr. Holcombe, D.V.S. of the United States Army, stationed at Leavenworth, to the district, and still the same conclusion was arrived at.

In a letter of March 8, which I received from Mr. W. N. D. Bird, a stock-raiser in Greenwood and Lyon Counties, and who made one of the first party of four to visit Neosho Falls, the following statements occur:

In the herd of Mr. Beard, two miles north of Neosho Falls, we saw three animals which had been isolated from the rest of his cattle. One was an aged cow, which was lying down, had a temperature of 103.5° , blisters on the root of the tongue, swelling of the pharynx, ulceration of the left hind foot extending upon the first phalanx and around the coronet. The other two were two-year old steers, and had the feet much more extensively diseased. One animal had lost one of the horny digits, and in the second, one of the pair was coming off. In the mouths were blisters from the size of a lentil to that of a large pea, extending the whole length of the tongue, on the mucous membrane of the mouth and on the upper and lower labiæ.

One animal had died the same morning, after two days' illness, the immediate cause of death appearing to be acute intestinal inflammation. Mr. Beard's herd was only infected ten days after he had purchased a cow from Mr. Keith, who occupies a place two miles farther north, on which the disease first appeared. * * * At Mr. Keith's we found a terrible state of things. Out of 120 head there was hardly one which had not been sick, or was sick, or just taking the disease. In one lot were 25 head of calves, of which fully half the number had lost either one or two feet (entirely gone); others were coming off. Some were ulcerated as far up as between the hock and fetlock. Then their mouths were very badly affected. What made it more conclusive that it was aphtha was that a calf had died in two days after the cow had been taken. On examining the udder blisters and ulcerations were found on the mammæ. Across the road were kept 95 head, consisting of young stock and cows, and of these we found 25 or 30 affected fully as badly as Mr. Keith's. This herd is owned by Messrs. Goodrich and Hindman. It is aphtha without a doubt, and in a most virulent form. * * * On Thursday (March 6) Governor Glick, Dr. Holcombe, and Mr. Sims, of the State Board of Agriculture, accompanied by a number of our citizens, went down. Dr. Holcombe confirmed it without a doubt. * * *

The *Emporia Republican* for March 7 furnishes the following:

There can no longer be any question whatever as to the nature of the disease.

I had been very doubtful whether the reports would be verified. I did not expect to find *the foot and mouth disease*, but was prepared to find another. It is a specific disease, which takes its own time and terminates either fatally or otherwise. In my judgment, only a few will die. The majority of the cattle examined showed the characteristic evidences of this peculiar disease. In the more recently discovered cases the very high temperature was found which belongs to this epidemic—about 104° Fah. One of the most positive proofs of the correctness of the diagnosis is the death of Keith's calf several days after the mother was taken with disease. The disease poisons the milk, and thus killed the calf, which was only a few days old. The characteristic ulcerations of the alimentary canal and mouth were also found.

As thus presented the evidence was overwhelming in favor of *foot and mouth disease*, and I decided to go at once to Kansas, but first consulted you as to the availability of any part of the Treasury appropriation for stamping out the disease in case it was

found to be still very circumscribed. Before I received an answer it transpired that the Commissioner of Agriculture had been notified and had sent Drs. Salmon and Trumbrower to Neosho Falls. The matter having been taken in hand by one Department of the National Government, I concluded that it would be undesirable for a second Department to incur the unnecessary expense of an independent investigation, and submitted this reason in a letter addressed to yourself.

Dr. Salmon concluded that the disease was *dry gangrene* caused by feeding on ergoted hay, and on my visit to Washington, March 31, I saw the specimens of diseased limbs which he had sent from Neosho Falls, and recognized them at once as corresponding in every respect with the dry gangrene with which I am familiar as occurring in the Northeastern States from a similar cause. I further saw the specimens of badly ergoted hay which Dr. Salmon had taken from the farms occupied by the diseased herds in Kansas, Missouri, and Iowa, and became fully satisfied that the dreaded malady was after all only the comparatively familiar *dry gangrene*.

Before reaching this conclusion I had telegraphed the Governors of Kansas and Missouri that the importance of the subject to the nation and to England demanded that the nature of the disease should be demonstrated in every separate outbreak by the inoculation of several sheep and swine. These would contract foot and mouth disease with almost unfailing certainty, whilst they fail to contract other affections which were likely to be mistaken for this. March 24 I had a telegram from Governor Crittenden, of Missouri, "There is not a case of foot and mouth disease in Missouri. Experts pronounce disease frozen feet. *Disease won't communicate.*" Governor Glick, of Kansas, intimated that experiments would be made to test the communicability of the disease by cohabitation and inoculation.

Two weeks passed without the announcement of any positive results from these experiments in Kansas, and it seemed to be settled, not only that the prevailing affection was dry gangrene, but that no other disease developing so rapidly as foot and mouth disease coexisted with it.

On April 8 came the announcement that a veterinary expert sent by the Canadian Government had pronounced the disease at Neosho Falls, Kans., and at Effingham, Ill., to be unquestionably *foot and mouth disease*. I at once telegraphed Governor Glick to ascertain whether there were any fresh cases which would furnish virulent matter for experimental inoculation, and having been assured that fresh cases were appearing as the result of cohabitation I started the same night, April 10, for Kansas. I reached Topeka April 13, waited one day for the Governor's arrival, and having received his assurance of all possible facilities for the conducting of the necessary experiments, I went to Neosho Falls, where I was met by Dr. Holcombe, now State Veterinarian, and Messrs. Hamilton and White, of the Cattle Commission, who accompanied me at once to the diseased herds. The state of the four affected herds at this time may be shortly described as follows:

State of herds at Neosho Falls.

Owners.	Total number of cattle in original herd.	Number attacked up to date.	Number that died or had been killed.
Keith's.....	123	Nearly all	15
Hindman's.....	96	35	30
Beard's.....	75	4	4
Prebinow's.....	180	12+	4

The following points were noted:

1st. All cattle that had suffered severely and survived showed the unequivocal lesions of *dry gangrene*. A number had lost not only the hoofs but the terminal bones of the digits which are inclosed within the hoofs; others had lost the skin, soft tissues, and bones up to the fetlock joint on one or more feet. In one or two the separation had taken place or was now being effected above the fetlock. In the carcasses of those that had been killed the dry gangrene was even more extensive than in the living.

2d. The cow (Keith's) which had lost its calf after two days' illness had ten inches of its tail and a portion of its right ear in a gangrenous state, and nearly ready to drop off. These I secured as specimens.

3. At Keith's and Beard's herds of swine had run with the

diseased cattle throughout, but had shown neither lameness nor sore mouth. At Hindman's a herd of pigs ran in the yard with the sick cattle until the hoofs of the latter began to slough off, when they were shut out lest they should ruin the stock by gnawing them. At the time of our experiments a young litter (three weeks old), too small to be kept out by the fence, ran freely with the sick cattle in the yard. The older hogs were only separated from the cattle by a common board fence; yet at no time did any of these swine, young or old, manifest any symptoms of lameness or sore mouth.

PROBABILITIES OF INFECTION WITH FOOT AND MOUTH DISEASE.

None of the affected herds were on the line of any railway where infecting material might have been dropped. No strangers were employed about the farms, so that the fancy that infection had been introduced in the clothing of emigrants had to be abandoned. No connection could be established with any recently imported animals. Keith's herd, the first to be attacked, had received, December 13, an accession of 63 calves (now yearlings), purchased from Mr. Davis in the northern part of Allen County, and these were the first to be attacked, ten day after arrival, yet inquiry at Mr. Davis's could elicit no evidence that his stock had suffered. Mr. Davis had picked up these calves mainly in Woodson County, intending to hold them, but sold on being offered a profit. All did well while on his hands, as did also his other cattle after they left. Keith bought 8 more calves February 2, which were in due time attacked like the others; one was also bought December 17 of Mr. Inge, whose remaining cattle continued sound. Keith and his nephew have farms on opposite sides of Hindman's, and Keith and his dog frequently crossed through among Hindman's cattle, yet the latter kept well for seven weeks after Keith's were attacked. Hindman's cattle passed once over the road used by Keith's, but this was six weeks before the former were attacked, which entirely excludes foot and mouth disease, as that would have developed within a week. Beard purchased a cow from Keith, and ten days later his stock were attacked, but the first to suffer was one of the former herd,

while the Keith cow was attacked later. The herds of Prebinow and O'Toole, and that in Osborne County, were attacked independently of any ascertained communication with herds previously affected.

In the search for infection, it was discovered that some Hereford cattle in Allen County had been imported through Portland, Me., and the recent disease in the quarantine there was at once invoked as a source of infection. But the disease began in Keith's herd on December 23, 1883, while the infected cattle were only landed at Portland on February 2, 1884, and were still in quarantine there April 15, when I was in Kansas investigating this outbreak. The cattle in Allen County were imported early last year.

From these facts it follows that there is no evidence of the introduction of any infection into Kansas; that there is no certainty that infection has been transmitted from herd to herd; that in the one case in which there was a suspicion that a newly-purchased cow had introduced the disease, the cow in question was attacked later than the other members of the herd; that in some herds a few cattle only suffered; and that on all farms the hogs, without exception, escaped. Such an experience is utterly incompatible with the idea of *foot and mouth disease*, the contagion of which rarely spares a single member of a herd of cattle mingling in the same yard, and is as virulent to pigs as to the bovine race.

ASSUMED INFECTION FROM ANIMAL TO ANIMAL.

At first the number of animals in one herd which contracted the disease in rapid succession naturally aroused suspicion of contagion, and later certain facts were held to demonstrate the same. Six cattle placed March 27 in a small yard built in Keith's corral, in company with six cattle with gangrenous limbs, and with access to hay like that formerly consumed by the latter, were attacked with sore (vesiculated) mouths on the eighth day, and one went lame, but Mr. Hamilton says the lameness disappeared when he removed some hardened mud from between the hoofs. The temperature of some of these animals rose to 104° Fah. On my ar-

rival seven days later, the cicatrices in the mouths of two were still visible, but the temperature was normal and the feet showed no evidence of having suffered. The fact that these cattle were for a week subjected to the same causes that induced the disease in the original herd invalidates any theory of contagion in their case. To correct this four additional fresh cattle were placed for twenty-four hours in the same yard with the six, and then the ten cattle and six sheep were, April 11, placed in a small yard, built on to the fence of Keith's corral and supplied with swamp hay, clear of ergot, corn in the ear, and well water. On April 14 these four had temperatures varying from 103.3° to 103.8° Fah., and one showed a bluish of the hard palate, tenacious mucus in the mouth, and a film of mucus on the feces. Next morning the temperatures were 103.3° to 104.3° Fah. On my first arrival, the same night, the temperatures were once more natural, and there were no lesions of mouth, feet, nor teats. After this they showed no symptom of illness. The sheep also had a natural temperature and no sign of lesion of mouth nor feet.

Up to this point there was no more than a mere presumption of infection. The first six cattle experimented on, and which had the slight eruption in the mouth, had been subjected to conditions like those producing the disease in the original herd. These conditions were probably intensified, as the small yard in which they were confined was some distance from both pond and pump, and it seems fair to assume that water was not so constantly accessible. The exposure to these conditions was for a limited time, it is true, but their suffering was proportionally slight, and the presumption is quite as strong for the development of the disease from these conditions as from contagion. The second lot of four cattle had been subjected to these conditions for twenty-four hours only, and they suffered from digestive disorder with attendant fever, but this was quite transient and was unattended by any visible eruption. The sheep which escaped the inimical conditions in the first small yard, and were merely subjected to contact with the six diseased cattle, showed no evidence of disease, not even elevated temperature.

While these experiments may, perhaps, be held to leave the

buestion of the transmission of the disease from ox to ox by contagion in doubt, they cannot by any means be accepted as demonstrating such contagion. They demonstrate, however, that the malady is not readily contagious to sheep, as it had already been shown that it was not contagious to swine. This excludes absolutely the idea of foot and mouth disease.

TRANSMISSION TO YOUNG CALVES.

In one case mentioned above a young calf in Keith's herd died with severe intestinal lesions while its dam was at the height of the disease. At Prebinow's, April 17, I found a calf five days old (suckled by a cow with sloughing feet) suffering with swollen pasterns, rawness between the hoofs on all four feet, and with a white, solid, aphthous concretion three-fourths of an inch in diameter covering a red congested surface beneath the tongue on the left side. This concretion was not a blister as in foot and mouth disease, but resembled rather that observed in *thrush* (*Muguet*) in young animals or the epithelial hypertrophy of rinderpest. Under the microscope it was seen to be made up largely of micrococci and the mycelium of fungi. Prebinow's cattle had been fed on millet, hay, and corn stacks.

The tender age of this last calf forbade the idea that it had contracted the disease through feeding on ergoted hay, and the fact that it was confined to a small corral, covered to the depth of a foot and a half with straw and manure, excluded the possibility of injury from irritating mud or wet. There remained, therefore, three possible sources of the disease. 1st, contagion from its diseased companions; 2d, infection from the morbid excretions of the sick; and 3d, the ingestion of the original poison with the milk furnished by its sick dam.

The claim of the transmission of a specific contagium is effectually disposed of in the experiments recorded below. The claim of infection from the excretions and morbid products of the sick (including the septic matter from the gangrenous limbs) on the one part, and the transmission of the original poison (the active principles of ergot, perhaps,) on the other, may be held as still undetermined, and it is to be hoped that Dr. Holcombe may

still find time to inquire into this experimentally. At present there is a strong presumption of the poisoning of the mouth and system through the milk, and of the feet through the fæces. At the same time the occurrence of two cases of what seem to have been septic wounds in man (Dr. Trumbrower and Mr. Keith) from handling the diseased parts suggests the probable action of the putrid products from the gangrenous feet.

INOCULATION EXPERIMENTS.

On my arrival at Neosho Falls I lost no time in starting inoculations. In the absence of a fresh case of the disease on the morning of April 16, I scraped the surface of the eschars in the mouth of the most recent victim, attacked six days before, and inoculated two sheep, one on the upper lip and pad covering the intermaxillary bone, and the other on the upper lip and interdigital space. Next day the wound on the interdigital space had a small scab on a reddish base, but all the sores healed with great rapidity, and at no time was there any symptom of fever.

April 17 took matter from the buccal concretion of Prebinow's sick calf (five days old), and the same day inoculated therewith a heifer (one of the last four added to Keith's small corral) on the lower gum and left ear. Next day at Beard's, inoculated two three-months-old pigs which had been kept in a pen apart from the cattle, and a half-bred Galloway calf twenty-four hours old. These were all watched closely till April 20, and the three last until April 21, but all the wounds healed rapidly and no constitutional disorder was observed at any time.

These negative results of the inoculation of matter from a fresh cow on cattle, sheep, and swine not only exclude any possibility of foot and mouth disease, but further demonstrate the disease is either not transmissible at all by contagion or inoculation, or if it be still held to be communicable from a first case to a second, that it is not transferable from a second to a third. We are fully warranted, therefore, in the claim that the affection cannot be perpetuated indefinitely after the manner of an animal plague, and that there is no danger of the generation in this way of a scourge which shall enter the channels of our cattle traffic and

carry devastation to the herds of the other States. It need not be claimed that a septic or other infection cannot be conveyed from the first victim, the limbs of which are sloughing off; the decision of this can be determined by further experiment. It is enough for the purposes of interstate and international commerce that all inoculations, from other lesions than those of the gangrenous extremities, have failed to transmit any disease whatever.

OUTBREAKS IN ILLINOIS.

On leaving Kansas I went, in company with Dr. Salmon, of the Agricultural Department, to visit the diseased herds in Central Illinois, which had also been pronounced *indisputable cases of foot and mouth disease*. We visited the following:

1. The herd of Lemuel Faunce, near Montrose, Cumberland County, 10 miles north by east of Effingham. Here the cattle were kept in a sloping yard adjoining a large wood lot and bounded by it on two sides. This yard contained two ponds supplied by springs, but also receiving considerable surface drainage from the manure-covered yard. To water the cattle during frost, holes had been broken in these ponds every morning. The stock had been fed hay and corn, the former largely composed of red top (*Aorostis vulgaris*) badly affected by ergot, and much worse than that of the previous year, 1882, some of which was still preserved and available for comparison. Twenty-one head had been attacked (fifteen grown cattle and six two-year-olds), of which two had been killed, five were still lame, and the others had recovered. One cow had lost both hind limbs up to the hock. There was only one pig kept, but it had entirely escaped. We, however, found four pigs belonging to a neighbor, rooting in Faunce's yard, but no harm came to themselves nor to their owner's other stock through such visits. Two old horses, kept all winter in the yard with the cattle, had had sores in the mouths and still showed circumscribed indurated white nodules on the mucous membrane covering the upper lip. Two two-year-old horses wintered with the cattle slobbered from March 1 to April 9. Both horses and cattle are said to have made a smacking noise with their mouths while they were sore. The first animal to be attacked was a dun steer, bred on

the place, and which took the disease in the latter part of December; had a relapse later, and at the time of our visit, April 24, had the left hind foot sloughing off at the fetlock. One heifer had had two relapses.

The disease in all cases began with violent diarrhea, and in a week or two later the legs swelled or stiffened, then cracked around as if cut with a blunt instrument, and finally dropped off.

2. Mr. Mason's, Island Grove, Wheeler, Jasper County, 18 miles east of Effingham, had 120 head of cattle, of which 17 head suffered, 6 had been killed, 2 of the survivors had each lost a hind leg to up near the hock, and several others were still lame. The two that had lost limbs were in high fever, with fetid breath, but no visible lesions of the mouth. Running with this herd throughout the period of sickness were 100 hogs and 50 sheep, not one of which had been observed to suffer at any time. There were also 25 horses and mules which were turned out into the yards when not at work, but none of them had been observed even to slobber. The hay on this farm consisted mainly of red-top run to seed and largely affected with ergot.

3. Mr. Wetherholt, of Wheeler, had a family cow, fed on similar hay, and at time of our visit she was down, unable to rise, and her hind limbs were sloughing off near the hocks.

4. A cow kept in barn connected with the boarding-house at Wheeler, fed on the same kind of hay with much ergot, was found suffering from the preliminary symptoms of diarrhea, slight fever, and impaction of the paunch, but lameness had not yet set in. The person in charge explained that she had only been a few days on this hay.

5. Mr. Keating, 6 miles northwest of Effingham, out of a herd of 45 calves and 6 cows, had 24 of the former attacked, mostly in a mild form, the first cases having been in the first week of January. Eight were killed and several others lost feet and now walk on the stumps. Sixty pregnant ewes ran with the diseased calves and escaped, as did also 6 cows and a small herd of pigs.

In addition to the above cases visited, we had authentic information of the existence of the disease at the following points:

6. At Du Brock's, 3 miles north and 1 mile west of Faunce's,

in a herd of 160 cattle, 8 calves suffered severely, though kept in a high, dry, warm, well littered shed, excluding the idea of freezing. Twelve goats running with the sick cattle entirely escaped.

7. Price, near Faunce's, had his single family cow attacked.

8. Kibler, 4 miles east of Mason's, had 10 cattle attacked in a herd of 50 head.

9. Alexander Wilson lost three steers out of a herd of 100 head.

10. Gibson had 6 head attacked out of a herd of 50.

11. Seling had 2 attacked in a herd of 20.

12. Truman, 3 miles southwest of Newton, had his cattle kept in a barn, yet several lost feet and legs.

13. Washington Holmes lost several from sloughing of the limbs.

14. George Lewis, Effingham County, had 10 attacked in a herd of 40 or 50 in the course of the last five or six weeks.

15. John Donaldson had 5 or 6 attacked out of 50 or 60.

16. List, of Wheeler, Jasper County, had 2 or 3 lame.

17. Schumacher, at Diederich's, near county line (Effingham and Jasper Counties), had 2 or 3 sick.

18. A. M. Bayles, near Stewart (Wabash road), lost two or three head.

Here we have an affection scattered over an extensive district, without any reference to contagion; a disease of which there is no evidence of extension from one herd to adjacent ones by contact; a disease which in different instances attacked a percentage only of the cattle exposed, while the large majority at such times escaped, in spite of the freest exposure; a disease which in every instance failed to attack sheep, swine, and goats, though these mingled freely with the sick; a disease which has persisted in a single herd confined to the limits of a small yard, for four months in succession, and has in this time relapsed in the same animal with renewed energy twice in succession, and ended in sloughing of limbs; a disease which in the one case in which it has been shown to attack solipeds has maintained sore mouth and salivation for six weeks, and we are told that this must be the contagious foot and mouth disease of Europe. In answer, it is safe to assert

that the demonstration of any one of the aboved-named eight prominent features of this affection forbids absolutely the idea that it is *foot and mouth disease*. How much more, then, is that malady excluded under the combined antagonism of all these eight counts.

(*To be continued.*)

INOCULATION OF BACILLAR PHTHISIS.

(Extracts from Mr. G. SEE on Phthisis Pulmonalis.)

Continued from page 171.

Tuberculosis inoculated through the eye.—We have here a mode of demonstration which is placed beyond question, inasmuch as it permits us to follow step by step all the phenomena of the contact of the tuberculous bacillus upon the various tissues of the eye.

It is Cohnheim who originated the ingenious idea of introducing the tuberculous matter into the anterior chamber of the eye. The recent experiments of Baumgarten, published as "*The Demonstration of the Pathogenic Value of Tuberculous Bacilli by Histology*," leave no room for doubt as to the insertion of the virus and the gradual development of the bacilli in the media of the eye. The tuberculo-bacillar substance being introduced into the anterior chamber of the organ for the first four days, no alteration is observed, the tissues of the eye appearing unchanged, yet every day the bacilli are visibly developing themselves in statu. Towards the fifth day they are observed to be extending and increasing in number, and outside of the tuberculous fragment, to occupy the cornea and the iris, and it is in the parts where they most abound in number, and all around them, that new so-called epitheloid cells are found. These appear first in small numbers, then increasing, and again, still more numerous, until the tuberculous nodule is found, the size of the tubercle and the abundance of the epitheloid cells always corresponding to the numbers of the bacilli.

Facts occurring in a similiar order are observed in the kidneys

also, which become loaded with bacilli; the parasites gathering in the glomerulæ, even when the renal structure is still quite intact. It is to be observed that the subjects of these experiments have been rabbits, which constitute the ground of culture most favorable to the bacilli, the tubercle always progressing and developing favorably and well in this animal. It is not the same with the dog, which is but slightly subject to tuberculosis and so effectually resists the experimental treatment that the inoculated tuberculosis is generally of a character only, and refuses to extend further. (*Friedlander.*)

Inoculated Bacilli.—When the tubercle remain of an imperfect and neutral character, and lacking in actual virulency, it becomes necessary to submit the bacillus itself to the direct experiment of inoculation. For this purpose Koch has employed every practicable precaution in order to perfect his experiments and remove them from all reasonable doubt or question.

Implantation of Bacilli into the Eye, the Peritoneum and the Blood.—Bacilli have been cultivated upon the coagulated serum of the blood; these gathered upon platinum wires passed to the fire, in such a manner that the liquid of culture was freed from all trace of blood, and of all other microphytes, and was composed exclusively of bacilli. These were obtained either from the tuberculous matter of man, viz., from human lungs affected with granulations or caseous pneumonia, or from the lung of monkeys, the inoculation being made by the mode of injection into the anterior chamber, through the cornea. In all these cases, irrespective of what animal had been operated upon, the same phenomena as those of the inoculation of tuberculous substance were observed. With a liquid poor in bacillus, a nodule was slowly developed which gradually involved the lymphatic glands, which became caseous; from thence the morbid process extends through the blood to the other organs. Or, again, when the liquid of culture was rich in bacilli, the tissue in which it had been implanted, together with the lymphatic system, become rapidly affected, and numerous nodules appear in the lungs, the spleen and elsewhere, as if the bacilli had been injected in the blood. May not these differences in the development of the

bacillar action furnish the reason why some tubercles stop and limit their growth, and in other circumstances, why the invasion becomes so rapid and general?

Bacillar Injections in the Peritoneum.—Here the same effects are observed, according to the quantity of bacilli inserted. When the operation is performed on animals refractory, or but slightly subjects to tuberculosis, as the dog, the rat, and white mice, they die only after several months, presenting then a very abundant eruption of tubercles in the viscera of the abdomen, though very few in the lungs.

These undeniable facts prove even the superiority of the bacillar to the tuberculous infection. And here is another proof: rats were fed, during several months, with tuberculous substances, without showing any visible effect. Tuberculous inoculations also failed. When the injection of the bacillus was made in the peritoneum, an extensive eruption of tubercles followed.

Bacillar Injection into the Veins.—When thoroughly pure liquid, free from solid particles, is injected into the blood itself, a miliary tuberculosis, more rapid and extended than the *spontaneous* one, is developed.

EXTERNAL CAUSES.

External Origin and Internal Development of the Bacillus.—I. *Parasitic Life.*—The bacillus, as demonstrated by experimentation under all its forms, being the only factor of tuberculosis, it becomes necessary to inquire into its origin. Whence does it come? Is it from the surrounding media, and is it independent of animal or human organism? If it has an external origin—if, for instance, it exists everywhere that there are animal or vegetable matters in putrefaction, and if it can live in them and produce and multiply its spores, we shall be unable to protect ourselves. But fortunately it is not so. The tuberculous bacillus is of much slower growth than other bacillæ, and only does so in the bloody serum and bouillon of meat, while a temperature of 30° Centi., night and day, is necessary to its development. This temperature may continue unaltered for weeks; but when even these favorable conditions exist, which is not always possible,

they are soon interrupted, or rather diminished, by other bacilli more rapidly prolific and requiring less heat. There is then an antagonism, which forms one obstacle more to their atmospheric development, and they may almost be denominated mere parasites, which cannot live without their living supports. Differing from the carbuncular bacteria, which may complete their growth outside of the animal economy, that of the bacillus is accomplished only in the living body. It may produce its spores, which become free in the air, and may return into the organism, to transform themselves into bacilli, but they do not need the surrounding media to take their last and permanent form.

II. *Metamorphic Origin*.—Neither do they refer their origin to the common microphytes: the transformation advocated by Nægely, Büchner, has never been proved, either by morphology, or, especially, by experiment. Every kind of bacteria cannot produce tuberculosis, even in animals most predisposed to phthisis, as the guinea pig and the rabbit. Once developed, the tuberculous bacillus retains forever its miserable privilege; they have been seen perfect, in their liquids of culture, after two years; in sputa, even in putrefaction, they remain natural for six weeks.

RESISTING POWER OF THE BACILLI.

Their Antagonism to the Microbes of Putrefaction.—An interesting question presents itself in reference to the reciprocal and comparative action of parasites. Is there antagonism between the bacilli and the microbes of putrefaction? Falk* admits, from recent experiments, that the virulency of the bacillar tubercle is attenuated by putrefaction. He has inoculated tuberculous substances in putrefaction, and has obtained only local tuberculosis; but it is to be observed that the pus of suppuration coming from the inoculation of tuberculous putrified masses produced in other animals a manifest tuberculous infection. If, then, the tuberculous bacilli are really attenuated by the process of fermentation, from the first inoculation, they must, *a fortiori*, either produce no tuberculosis, or one weaker at the second. The question remains obscure.

* Berlin—Wollens, 1883, No. 50.

Baumgarten produces new experiments*. When milk, or a bacilliferous *fresh* liquid, which has proved its virulency, is exposed to the temperature of a room, or to warm air, so that it putrifies, it will produce but insignificant lesions, and the bacillus still conserves its character, viz.: its form and coloring reaction, it having then lost only its morbigeneous properties. Then, when a mixture is made of putrified pus with a liquid containing *fresh* bacilli, and this mixture is injected into the anterior chamber of the eye, one may see, notwithstanding the invasion of the parasites of fermentation into the tissues, the development of the tuberculosis taking place, and may conclude that it is only after a long contact of the bacilli with the substances in putrefaction that the former lose their power.

Resistance of the Sputa.—Schill and Fisher (*Memoire sur la desinfection des crachats phthisic*, 1883), go further, and hold that sputa submitted to putrefaction during several weeks retain their nociveous power; they have seen sputa in putrefaction preserved intact the forty-third day; their bacillar, notwithstanding the presence of numerous bacteria of putrefaction, and keep maintaining their phthisiogenic power; for when injected into guinea-pigs the animals become tuberculous. Their virulent property was not doubtful. Kussner confirms these facts. In injecting bacilliferous with ordinary ones he obtained entirely different and opposite results.

The resistance of the sputa to the action of antiseptics is no less marked. Absolute alcohol, salicylic acid and anilined water act only when in a very high degree of concentration. Phenic acid in the proportion of 5 per cent. may act. Dry heat at 100° for several hours disinfects them; a coction of 15 to 20 minutes is sufficient to produce the same result. It is especially to the spores and to their refractory state that the continuation of the deleterious action of the sputa is due.

Tuberculosis of Respiratory Origin.—Propagation by Inhaled Bacilliferous Air of Sputa.

I. Condition of the Introduction of Bacilli into the Lungs.—

* Centralblatt fur die Med. Wiss, 1884, No. 2.

The respiration of air loaded with the dust of dried sputa is the most certain mode of transmission of human phthisis. When sputa are coughed up on the ground, they dry and soon mix with the dust. When the patient soils his linen handkerchief (which he often uses to cleanse his mouth, which is constantly in contact with the virulent matter), there again is formed a kind of dry pulverulent dust, and it is known that the bacteria of the air are not isolated, in suspension, but that they are there only after the desiccation and the breaking up of the superficial layer of baciferous liquid, or when they are carried by a very volatile dust, as that coming from vegetable fibres, hairs or epidermic scales, as from clothing. This has been demonstrated by Hesse.

The virulency of these dried sputa continues for months, depending especially upon the greater or less complete growth of the bacilli and the quantity of spores they carry.

II.—Mode of Entrance Into the Respiratory Part—Numerous Obstacles.—When bacilliferous dust is inhaled it may, like other kinds, remain in the superior respiratory organs, or progress as far as the alveolæ, which is the case in deep respiration with the mouth open.

The nostrils already form an obstacle to the entrance into the respiratory canals; the larynx stops them or rejects them during coughing; when they arrive further it is not yet certain that they will remain there, as they are often turned back by the vibratory epithelium of the bronchiæ. As bacilli develop very slowly, they need the assistance of concurrent favorable circumstances to attach them. A stagnant mucous, for example, easily holds them; or, again, when adhesions of the lungs render it immovable, a vicious conformation of the chest produces the same result by preventing the entire dilatation of the lung, and so producing the accumulation of the exudation in the bronchiæ, where the bacillus not only fixes itself but readily develops.

INHALED BACILLIFEROUS LIQUID.

I.—Experiment of Koch.—The liquid of culture having been diluted and allowed to rest, a portion of it deposited, the slightly turbid superior layer was decanted and placed in a dose of 0.50

cubic centimeters in a closet where eight rabbits, ten guinea-pigs, four rats and four mice were placed. After from fourteen to twenty-five days seven of the animals had died, and the others were killed after twenty-eight days. The lungs of the pigs and rabbits were filled with tubercles like those produced by the inhalation of dried tuberculous sputa, extending into the pulmonary alveolæ, as in spontaneous tuberculosis, which once more proves that this is truly a tuberculosis by inhalation.

Amongst the rats and rabbits the lesion was not as caseous as in the other animals.

In all cases the tubercles artificially obtained, reinoculated to other animals, never failed to produce general tuberculosis.

II.—Résumé.—Thus all the processes of bacillar infection, inhalation, inoculation, produce the same result as the inoculation of the tuberculous substance. They give rise to miliary and to caseous tubercles, equally with spontaneous tuberculosis, and there is not even an exception for refractory animals, as dogs, cats, etc. Two hundred and seven experiments of Koch prove this general law, viz: *bacillemia is equivalent to tuberculosis*.

It may be objected that other parasites may produce similar effects, viz; a tuberculosis; but it must be observed that everywhere and always, in true tuberculosis, whatever its origin may be, the bacillus is always found, and never in the pseudo-tubercles. It can then be said that the *tuberculous bacillus is in the same correspondence to tuberculosis as the carbuncular bacteria is to anthrax*.

MONSTROSITIES.

By C. C. LYFORD, M.D., C.M., B.S., V.S., President Northwestern Veterinary College.

The following notes and accompanying cuts are representatives of specimens donated to the Northwestern Veterinary College during the past year:

FIG. 1.—A lamb of the monocephalian variety (*Cormo Melodidymi*), was donated to the college museum by C. R. Mason, student.

The vertebral column is double posteriorly from atlas, while the abdominal walls are continuous as far down as the umbilicus, which is single. The head is perfectly normal in appearance, though considerably enlarged in proportion to the body, as the entire foetus weighs only two and three-quarter pounds.

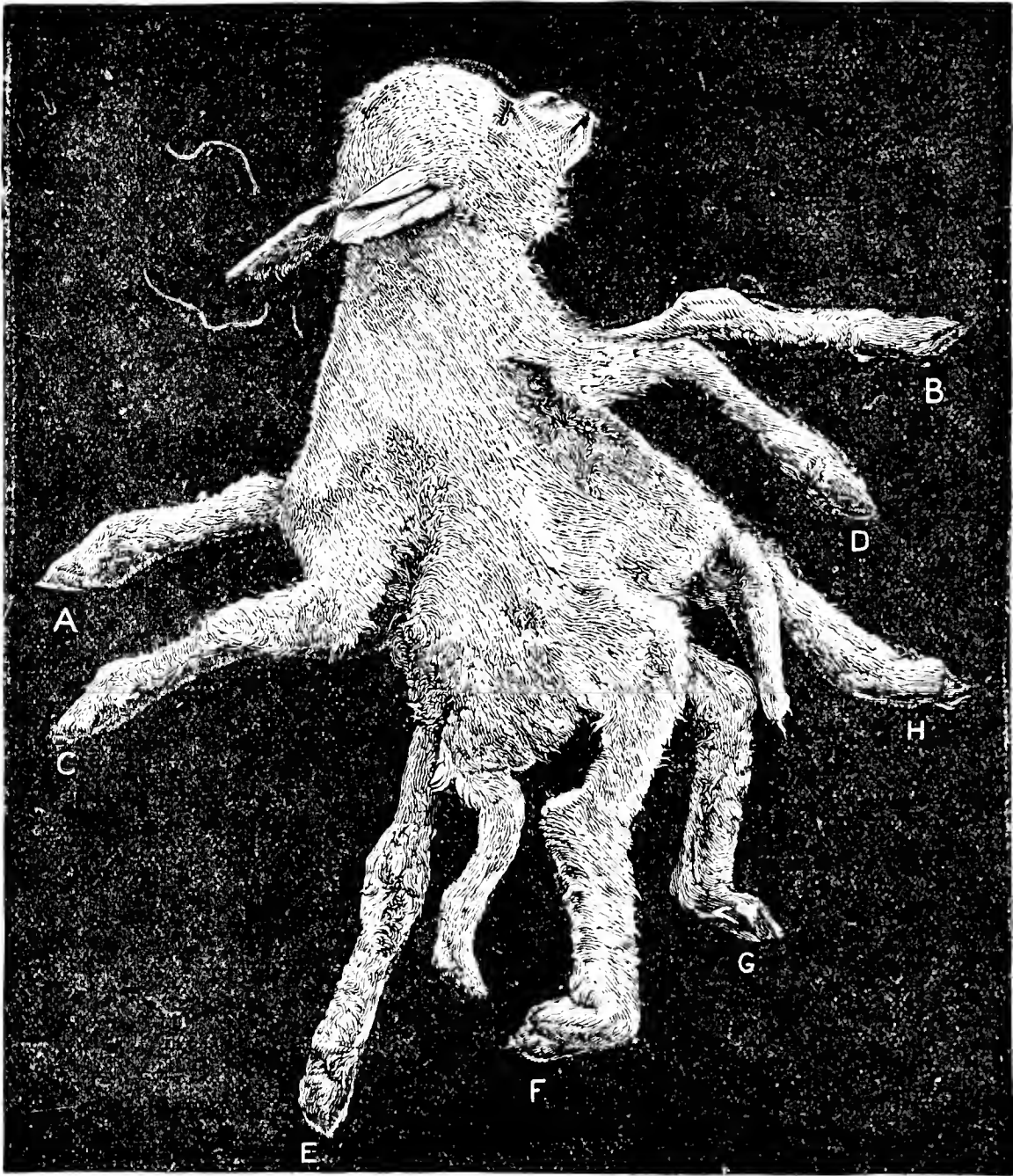


FIGURE 1.

Figure 2 represents a monster calf (*Pygodidymus Aversus*), which is so exactly united at the posterior dorsal region as to make the vertebral columns appear as almost continuous.



FIGURE 2.

Head No. 1, with fore extremities A and B, correspond to pelvis, tail and extremities C, I, E.

Head No. 2, with fore extremities G and H, correspond to hind extremities D, F and J—the tail being absent, as also the sacrum, pelvis bones and lumbar vertebræ.

Luckily head No. 1 was presented with fore legs A and B, so so that D was easily brought forward under B, after which, traction being made on A, B and D, the foetus was quite easily removed. Had No. 2 been presented instead of No. 1, it is easy to see what difficulties must have followed, by pelvis and extremities C, E and I, as well as F, endeavoring to pass with thorax and fore extremities G and H, through the pelvic cavity of the mother.

The weight of the monster was 132 lbs., while the mother was only a moderate sized grade heifer, two years old. This being

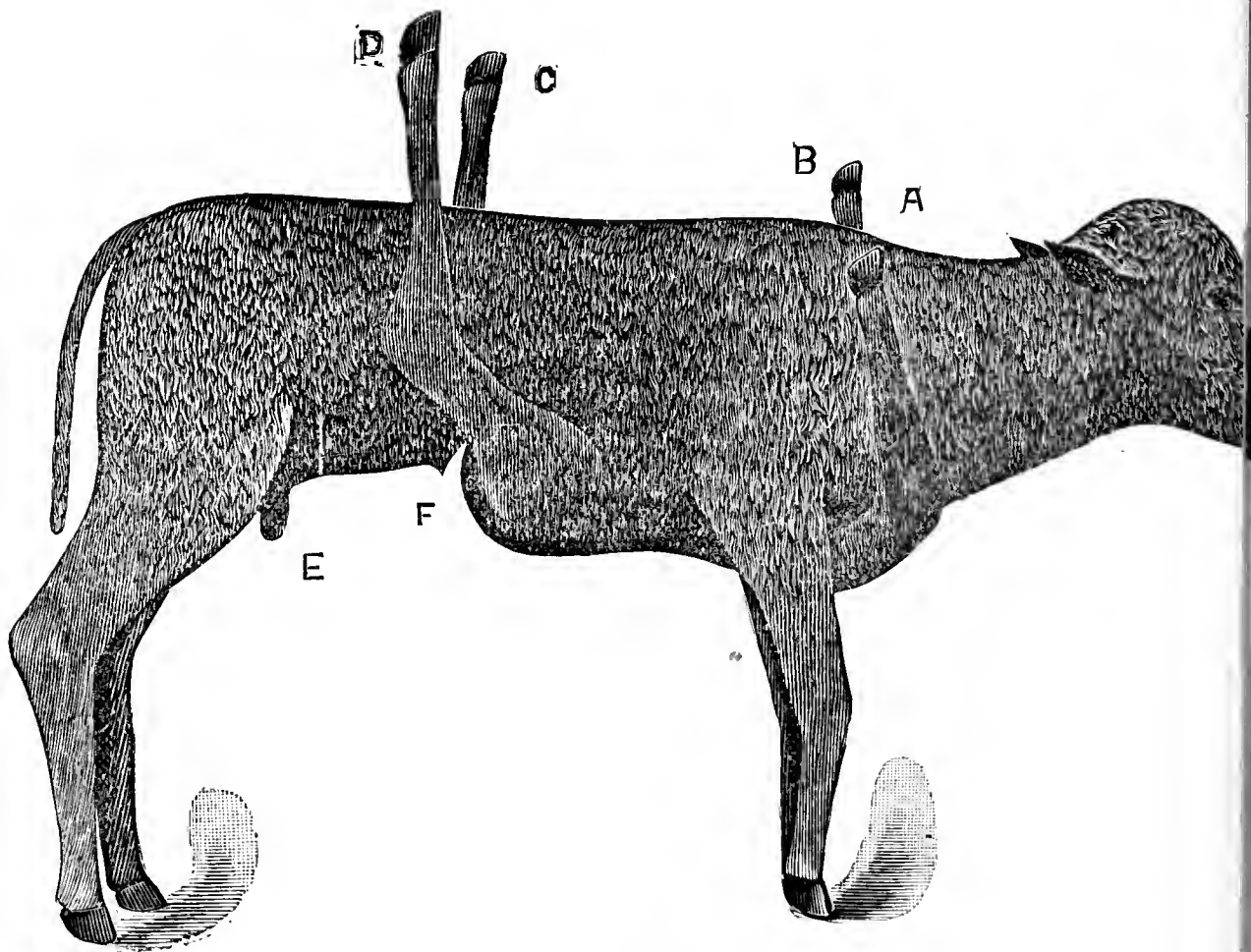


FIGURE 3.

the first calf, left her rather ill-disposed for several days after delivery. The foetus was dead at time of delivery, head No. 1 having been noticed protruding for about twelve hours prior to assistance being given.

Figure 3 represents a mounted specimen shipped here from Iowa, so that its history is unknown. It corresponds exactly to the *Emprosthomelophorus Octipes* (*Fleming's Veterinary Obstetrics*), having four supernumerary limbs beneath the thorax. There is no vertebral column corresponding to accessory limbs A, B, C and D, though scapulæ overlap the cariniform cartilage and anterior costal cartilages, while the pelvic bones are applied to and overlap the xiphoid and cartilages of the posterior true ribs. E, scrotum, and F, penis.

All three monstrosities, respectively figures 1, 2 and 3, belong to the male gender.

Besides those already noticed, two other monstrosities have been donated. One, a four-legged duck, with the two supernumerary ones having origin from the caudal extremity; the other a four-legged chicken, with the two accessory limbs having their origin beneath the wings; otherwise normal.

EDITORIAL.

THE ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

Since the semi-annual meeting of the United States Veterinary Medical Association, which was held last March in Boston, we have received from various parts of the country many inquiries asking in what city the place of meeting would this time be—where would the anniversary reunion be celebrated?—was it as usual in the East, in New York City? or was at last the Association going to start out of her routine and go traveling West? Up to a few days we were unable to give a definite answer; our wishes only could be communicated, with the fear which we entertained that strong, and to some very apparently good, reasons might influence the members of the Comitia Minora, and

again have the meeting in New York. It is with much gratification that in this issue we can settle the question and make it known, as will be seen by the report of the *Comitia Minora*, which we publish, that the next annual meeting of the Association will take place on the regular day of September in Cincinnati.

“You will not have a quorum!”

These were the conclusions of the minority when the question was put to a vote.

If this is to be true remains for the Association to decide. If there is not enough professional ambition amongst the forty or fifty members of the Association who belong to the East; if the apathy characteristic of the American veterinarians cannot be shaken enough to make New York, Massachusetts, Pennsylvania, New Jersey and the other States go for once towards their sister States of the West; if there are not enough interests at stake; if the officers of the Association, the members of the various committees, that on Education, on Diseases, on Prizes, if all remain satisfied with the selecting of the place and nothing more, and quietly wait for the day when a few enthusiasts will start for Cincinnati; oh, then if—if—of course there will be no quorum; there will be no meeting; there will be a great failure, a great joy for those who are enemies of the Association—and the next best thing that the U. S. V. Med. Association will have to do will be to die, to cease her labors as unworthy of being a national institution.

But, on the contrary, if, as we hope, the majority of the members will go, leaving aside personal interests, following the general professional welfare; if the President and the Secretary of the Association will fully appreciate their duties and what they ought to do; if the Chairmen of the various committees will attend to their offices and bring reports of their departments; if the various States Associations will send delegates, we see no reason why a quorum should not be obtained; nor why the meeting should not be a success. What is needed is a little more energy and a little more professional love, and perhaps a little less self interest. We know it is hard for some to leave a prac-

tice for four or five days ; perhaps, besides the loss resulting from this, a question of expenses is to be considered ; but after all this happens so seldom, it is so unusual for us to go off at such a distance, that it ought to be a sufficient reason for all of us to go, especially when this is to be so handsomely repaid by the union of a large number of the veterinarians of the country, and the great advantage that all of us, and, above all, the United States Veterinary Medical Association, will gain by it.

DR. F. S. BILLINGS GOES TO EUROPE.

We have learned of the contemplated departure to Europe of our friend and colleague Dr. F. S. Billings. We understand the object of the trip is to possess himself of the new discoveries made in pathological investigations since he left Berlin, by working as an assistant in several of the laboratories of France and Germany. Since his return to America Dr. B. has not remained idle, and the many writings that have been published by him, whether with satisfactory results or not, with more or less wisdom might be said, are in our estimation an example that many of our friends on this continent might, if not entirely imitate, at least to some extent take pattern after. Few amongst us have written as much in years as Dr. Billings has done in months, and though in some instances he has overreached the object he had in view, no one will fail to appreciate that he ever had but one purpose, viz : *the elevation of his profession*.

SANITARY STATEMENTS.

The crowded condition of this issue prevents us from publishing the results of the investigations we have inaugurated on this subject for the present. We will do so in our next number, and in the meantime call again upon some of our friends who have not yet answered previous requests.

OUR REGISTER OF REGULAR GRADUATES.

In undertaking in recent issues the publication of the regular graduates practicing in the United States, we have not ignored

the difficult task before us—for though we are acquainted with a great many, we know well how many obstacles would lie in the way of our obtaining the names of all, or even of nearly all those that are graduated. To try to avoid what some might consider as a personal objection and to do justice to all as much as we could, we first took what was considered the best way, and directed ourselves to the principals of the veterinary colleges that we knew of in North America, and thanks to this, we have been able, including this issue, to present the names of the alumni of of three veterinary institutions. If we should stop here, no doubt our register would be very incomplete, and we hope our readers will kindly combine to assist us. Agricultural schools to which veterinary departments are attached, like Cornell, like Amherst and others; medical colleges or universities, like Pennsylvania and Harvard, would do us a great favor and assist us in doing justice to their alumni by sending us the names which they know ought to be published. But not only that, every individual practitioner must feel in duty bound to send us the names and titles of those whom they may know to be holders of diplomas, especially if the possessor has obtained his degree from a foreign school. It is not only American graduates that we propose to publish, but as fully as we can veterinarians practicing in the United States. We need not say that our thanks are hereby sincerely tendered to all those who may see fit to help us in our work. All of us are interested in it.

REGISTER OF GRADUATES OF VETERINARY MEDICINE.

Continued from page 180.

ALUMNI OF THE ONTARIO VETERINARY COLLEGE.

(Copied from the advance sheets of the Announcement of the Ontario Veterinary College, kindly furnished us by Principal A. Smith, V.S.)

Names in italics indicate, so far as we know, practitioners in the United States.

Ackrell, H. D.....	Belleville	1879
Armstrong, J.....	Bayfield.....	1879
Alexander, James Graham.....	Sandhill.....	1874
Anderson, James.....	Drumquin.....	1875
Allan, Thomas A.....	Brockville.....	1874
<i>Atkinson, Vicars Thomas.....</i>	<i>Milwaukee, Wis., U.S.....</i>	<i>1875</i>

Aikenhead, John.....	Clinton	1875
Anderson, William.....	Elora.....	1875
Armstrong, Robert J.....	Markham.....	1872
Anderson, S. G.....	Tottenham.....	1878
<i>Ashe, T.</i>	Brooklyn, N. Y., U.S.....	1881
Austin, W. B.....	Waterford.....	1881
<i>Adair, H. B.</i>	Paris, Ky., U.S.....	1883
Addison, James	Newmarket.....	1883
<i>Armstrong, —.</i>	Au Sable, Mich., U.S.....	1883
Badgerow, A. H.....	Uxbridge.....	1881
Bateman, D.....	Port Perry.....	1879
<i>Bartram, E. W.</i>	Ovid, Mich., U.S.....	1879
<i>Bartram, E. S.</i>	Lainsbury, Minn., U.S.....	1881
<i>Bell, G. W.</i>	Oswego, N. Y., U.S.....	1880
Bell, A.....	Sharpton.....	1880
Blackwell, E.....	Gleneoe.....	1879
Butcher, H.....	Trafalgar	1879
<i>Bates, G. W.</i>	Wellington, Mo., U.S.....	1877
<i>Bond, John P.</i>	Chicago, Ill., U.S.....	1873
Baird, Robert.....	Brueefield	1873
Brady, William.....	Tilsonburg.....	1873
<i>Brackin, J. A.</i>	Pittsfield, Mass., U.S.....	1873
Burns, William.....	King	1872
Baker, —.	Galt.....	1869
<i>Bryce, John</i>	Erie, Penn., U.S.....	1870
<i>Brenton, S.</i>	Jackson, Mich., U.S.....	1880
Byers, W. J.....	Lloydtown.....	1879
Burnett, J.....	London	1880
Bailey, J.....	Barrie.....	1871
Beatty, John.....	Cobourg.....	1876
Brodie, Charles J.....	Bloomington.....	1875
<i>Brooks, F.</i>	Rochester, N. Y., U.S.....	1881
Boswell, Walter G.....	Sydenham, England.....	1875
Burt, W.....	Simeoe.....	1880
<i>Burt, D.</i>	Fargo, Dak., U.S.....	1881
<i>Butler, J. S.</i>	Grand Rapids, Mich., U.S.....	1881
Bell, W. S.....	Kars.....	1882
<i>Blanchard, L. D.</i>	Mt. Eaton, Ohio, U.S.....	1882
<i>Borneman, H. G.</i>	Clayton, Penn., U.S.....	1882
<i>Brodie, J. L.</i>	New London, Iowa, U.S.....	1882
Burt, G. W.....	Lynn Valley.....	1882
<i>Berry, Vinton A.</i>	Marion, Ohio, U.S.....	1883
Blaekall, Jas. E.....	Birr.....	1883
<i>Blank, Cyrus J.</i>	Coopersburg, Penn., U.S.....	1883
<i>Bowen, E. E.</i>	Tyre, N. Y., U.S.....	1883
<i>Calder, J. A.</i>	Peoria, Ill., U.S.....	1881
Carley, L.....	Laspay.....	1881
Cather, Lavin.....	Lindsay.....	1867

Cain, W.	Cheltenham.....	1880
Cowan, William.....	Galt.....	1868
Coleman, A. O. F.....	Ottawa.....	1869
Coates, John.....	Barrie.....	1867
Cæsar, J.	Port Hope.....	1871
Churchill, T.	Seaforth	1871
Churchill, William.	Goderich.....	1871
Colcleugh, William.....	Mount Forest.....	1871
Coulter, G.....	Weston.....	1880
Colsson, P. Z.....	Mobile, Ala., U.S.....	1880
<i>Craig, John</i>	Hamilton.....	1870
Cæsar, James.....	Campbell Cross.....	1870
<i>Crane, C. C.</i>	Sharon Centre, Ohio, U.S.....	1881
<i>Cleaver, K. H.</i>	Allentown, Pa., U.S.....	1879
<i>Coppis, G. W.</i>	Madisonburg, Ohio, U.S.....	1879
Carson, Thomas L.....	London.....	1875
<i>Charlesworth, James</i>	Flint, Mich., U.S.....	1873
<i>Chase, T. P.</i>	Ashland, Ohio, U.S.....	1878
Cook, Harland.....	Grahamsville.....	1873
Cook, Charles H.....	Cobourg.....	1872
<i>Cook, Andrew S.</i>	Binghamton, N.Y., U.S.....	1872
Coleman, A. R.....	Port Dover.....	1876
Campbell, Archibald M.....	Varna.....	1872
Churchill, James.....	Clinton.....	1874
<i>Campbell, Frank A.</i>	Canandaigua, N.Y., U.S.....	1874
Cummings, —.	Mitchell.....	1870
<i>Claris, J. T.</i>	Buffalo, N.Y., U.S.....	1882
Clark, R. C.....	Wellesley	1882
<i>Cook, J. N.</i>	Atlanta, Georgia, U.S.....	1882
Cottam, S. J.....	Edinburgh, Scotland.....	1882
<i>Cotton, T. Bent</i>	Mount Vernon, Ohio, U.S.....	1882
Carter, R. W.....	Guelph.....	1883
Courtenay, E. St. George.....	Waterford, Ireland.....	1883
Clement, H. H.....	Michigan.....	1883
<i>Crane, J. B.</i>	Sharon Center, Ohio, U.S.....	1883
Daley, F.....	Georgina.....	1881
<i>De Vore, D. L.</i>	Red Oak, Ohio, U.S.....	1881
<i>Dell, J. A.</i>	Saline, Mich., U.S.....	1881
<i>Detlor, Albert</i>	New York, N.Y., U.S.....	1881
Douglas, Albert C.....	Belleville.....	1880
Deacon, J. R.....	Belmont.....	1878
<i>Derr, F. W.</i>	Wooster, Ohio, U.S.....	1878
Duncan, John Thomas.....	Goderich....	1872
Dean, Joseph.....	Peterborough.....	1872
<i>Doan, Henry C.</i>	Iowa, U.S.....	1876
<i>Drinkwater, Albert</i>	Rochester, N.Y., U.S.....	1874
Dunbar, William Alexander.....	Florence.....	1876
<i>Dallimore, George A.</i>	Minn., U.S.....	1879

<i>Dumphy, J.</i>	Jackson, Mich., U.S.....	1880
Dryden, W. A.....	Tavistock.....	1882
Dickenson, S. S.....	Zion.....	1883
Dunn, Chas. M.....	Hamilton.....	1883
Elliott, William.....	Elora.....	1866
Elliott, Charles.....	St. Catharines.....	1870
<i>Elliott, John</i>	Toledo, Ohio, U.S.....	1871
Elder, James.....	Rodgersville.....	1875
Evans, R.....	Tullamore.....	1871
Evely, M.....	St. Thomas.....	1869
Evely, Henry.....	St. Thomas.....	1874
Fisher, Thomas.....	Georgetown.....	1879
<i>Foelker, Samuel</i>	Allentown, Pa., U.S.....	1879
Foster, Newton.....	Belleville.....	1879
<i>French, O. B.</i>	Bloomfield, N. Y., U.S.....	1879
Frink, James.....	St. John's, N.B.....	1879
Fowler, James.....	Seaforth.....	1872
Fry, Jacob.....	Dunnville.....	1872
<i>Fair, William Cooper</i>	Cleveland, Ohio, U.S.....	1871
Faskin, John W.....	Paris.....	1874
Falls, George.....	Ottawa.....	1878
<i>Folsetter, William</i>	Evansville, Ind., U.S.....	1874
<i>Fretz, J. B.</i>	Pennsylvania, U.S.....	1880
Ferguson, J.....	Toronto.....	1881
Fisher, J. W.....	Baillieboro.....	1883
Forbes, E. R.....	Toronto.....	1883
<i>Ferling, G. G.</i>	Indianapolis, Ind., U.S.....	1883
Fisher, Fred.....	Baillieboro.....	1883
<i>Goff, F. L.</i>	Ohio, U.S.....	1880
Gemmell, J. E.....	Toronto.....	1879
Gemmell, Robert.....	Etobicoke.....	1868
Grant, Neil.....	Sombra.....	1879
<i>Green, C. S.</i>	Richmond, Ill., U.S.....	1879
Grenside, T. C.....	Guelph.....	1879
Gibb, William.....	St. Mary's.....	1876
Gibson, James.....	Walkerton.....	1871
Graham, James.....	Manitoba.....	1872
Grange, C. A. A.....	Guelph.....	1873
Garbutt, William.....	Co. Wellington.....	1872
Golden, E.....	Flora.....	1876
<i>Gowland, George</i>	Seneca Falls, N. Y., U.S.....	1865
Gunn, Andrew.....	Beaverton.....	1876
<i>Gustin, C. M.</i>	Woster, N. Y., U.S.....	1881
<i>Goulding, F.</i>	Richmond, Mich., U.S.....	1882
Heckenberger, J.....	Catasauga.....	1879
Hammil, T. J.....	Keenansville.....	1879
Harding, R. A.....	Kingston, Jamaica.....	1877
Hamilton, H.....	Toronto.....	1877

<i>Howell, C.</i>	Iowa, U.S.....	1880
<i>Hawley, H. Y.</i>	Adrian, Mich., U.S.....	1880
Harrison, Edward.....	Milton.....	1867
High, M. L.....	Bayham.....	1877
Hilcock, Thomas.....	Uxbridge.....	1872
Honey, William.....	Mitchell.....	1872
Hamilton, Daniel.....	Harriston.....	1872
Holmes, Benjamin.....	Erin.....	1873
Hope, Thomas.....	Berlin.....	1869
Hopkins, H.....	Green River.....	1877
<i>Howard, R. D.</i>	Castile, N.Y., U.S.....	1875
Hawkins, Joseph.....	Paris.....	1871
<i>Harthill, A.</i>	Louisville, Ky., U.S.....	1870
<i>Hagyard, J. R.</i>	Lexington, Ky., U.S.....	1875
Hinman, W. H.....	Winnipeg.....	1875
<i>Hood, T. A.</i>	Ogdensburg, N.Y., U.S.....	1875
<i>Hutchings, Robert Charles.</i>	Watertown, N.Y., U.S.....	1871
<i>Henderson, Matthew J.</i>	Syracuse, N.Y., U.S.....	1874
Hughes, James Spalding.....	Schomberg.....	1874
Hodgson, Thomas.....	Toronto.....	1874
<i>Hagyard, T.</i>	Lexington, Ky., U.S.....	1878
Hand, W.....	Alliston.....	1878
<i>Heckenburger, H.</i>	Catasauga, Pa., U.S.....	1878
<i>Hinman, G. P.</i>	Colborne, Pa., U. S.....	1878
<i>Humphries, J.</i>	Lockhaven, P.A., U.S.....	1878
<i>Honiford, S. L.</i>	Pittsfield, Mass., U.S.....	1881
<i>Huntsberger, W.</i>	East Union, Ohio, U.S.....	1881
Hall, G. H.....	Chatham.....	1882
Hodgins, J.....	London.....	1882
<i>Howe, Wm. R.</i>	Cleveland, Ohio, U.S.....	1883
Jaffrey, John.....	Woodbridge.....	1874
Jex, W.....	Brantford.....	1878
Johnston, John.....	Teeswater.....	1879
<i>Johnson, J. D.</i>	Wahoo, Neb., U.S.....	1882
<i>James, V. L.</i>	Springfield, N.Y., U.S.....	1883
James, Harry F.....	Ottawa.....	1833
Jaffery, Geo. P.....	Toronto.....	1883
Johnston, Jas.....	Dundee, Scotland.....	1883
Jones, Robt. A.....	Simcoe.....	1883
Jopling, Wm.....	Parkhill.....	1883
Kempshell, George.....	Ingersoll.....	1866
Kenning, E.....	Elnira.....	1877
Kenning, Richard W.....	Pembroke.....	1872
Kidd, William Charles.....	Listowel.....	1871
<i>Keeler, J. R.</i>	Harleyville, Pa., U S.....	1883
Kerr, Thos.....	Wingham.....	1883
Kidd, W. F.....	Cookstown.....	1883
<i>Langtry, W.</i>	Fort Wayne, Ind., U.S.....	1877

Livingston, Archibald M.....	Sarnia.....	1872
Lloyd, T.....	Newmarket.....	1870
Lipsett, Francis Wesley.....	Manitoba.....	1874
Little, Charles.....	Winnipeg.....	1872
Loughman, J.....	Montreal.....	1880
Labron, W. A.....	Perth.....	1881
Lount, G. F.....	Chicago.....	1881
<i>Langford, W. E.</i>	Indiana, U.S.....	1881
Logan, A.....	London.....	1881
Lawson, S.....	Acton.....	1882
Lyons, W. G.....	Cheltenham.....	1882
Massie, James.....	Smith's Falls.....	1879
Matthews, T. W.....	Toronto.....	1879
Matthews, C.....	Brougham.....	1881
Matthews, A. D.....	Brougham.....	1881
<i>Meredith, Thomas</i>	Jamestown, N. Y., U.S.....	1880
<i>Miller, Joseph</i>	Seville, Ohio, U.S.....	1879
<i>Milnes, John C.</i>	Cedar Rapids, Mich., U.S.....	1879
<i>Martin, James</i>	Lockport, N. Y., U.S.....	1872
Miller, David.....	Exeter.....	1873
<i>Morrison, T. A.</i>	La Salle, N. Y., U.S.....	1876
Mayhew, Edward.....	Sandhill.....	1870
Murcott, T. H.....	Arnprior.....	1875
<i>Moor, A.</i>	Mansfield, Ohio, U.S.....	1878
Murray, George.....	Ridgetown.....	1883
<i>Maguire, A.</i>	Joliett, Ill., U.S.....	1881
Marshall, H. G.....	Dungannon, Ireland.....	1883
McDonagh, T.....	Goderich.....	1879
McEvan.....	Cobourg.....	
<i>McNally, M.</i>	Houston, Texas, U.S.....	1879
McNee, Archibald.....	Winnipeg.....	1867
McDonald, John.....	Ingersoll.....	1869
McIntosh, W. D.....	Kingston.....	1869
McConnell, Thomas.....	Brampton.....	1872
McNaught, David.....	Seaforth.....	1872
<i>McLeod, Alexander</i>	Jackson, Mich., U.S.....	1872
McIntosh, David.....	Kincardine.....	1872
<i>McKenny, Richard</i>	Michigan, U.S.....	1873
<i>McIntosh, James</i>	Oswego, N. Y., U.S.....	1874
McFadden, D. H.....	Allenford.....	1880
<i>McCormack, W. J.</i>	Detroit, Mich., U.S.....	1879
McKenny, J.....	Picton.....	1874
<i>McKillop, M. H.</i>	Chicago, Ill., U.S.....	1877
McCollum, Alexander.....	Stratford.....	1875
McKerracher, J.....	Highgate.....	1878
McDonald, Alexander.....	Cobourg.....	1882
McInally, J. G.....	Lyn Valley.....	1882
McLain, W.....	Nanticoke.....	1882

<i>McLean, Chas. C.</i>	Meadville, Pa., U.S.....	1883
McElory, H.....	Orillia.....	1881
McEvers, Geo.....	Campbellford.....	1877
Newton, R. W.....	Belleville.....	1877
Nixon, Frederick.....	Fergus.....	1874
Nott, John.....	Brussels.....	1873
<i>Newton, J. V.</i>	Toledo, Ohio, U.S.....	1878
Newton, John.....	Weston.....	1883
<i>Ovens, H.</i>	Bay City, Mich., U.S.....	1881
Oliver, E. C.....	Claude.....	1879
Otwell, S.....	Glasgow.....	1878
O'Leary, Louis.....	Duffin's Creek.....	1873
O'Neil, J. D.....	London.....	1873
Parkins, W.....	Beeton.....	1882
<i>Prentice, E.</i>	Chicago, Ill., U.S.....	1879
Palmer, S. P.....	Toronto.....	1878
<i>Pierce, B. A.</i>	Creston, Ill., U.S.....	1878
<i>Page, B. B.</i>	Illinois, U.S.....	1880
Powers, W.....	Lindsay.....	1879
Preston, W.....	Concord.....	1881
<i>Pierce, C. A.</i>	Creston, Ill., U.S.....	1882
Porteous, A.....	Simcoe.....	1882
<i>Price, J.</i>	Line, Lexington, Pa., U.S.....	1882
Perdue, John.....	Orangeville.....	1883
Perdue, John N.....	Wingham.....	1883
Plank, M. W.....	Uxbridge.....	1883
<i>Poucher, M. M.</i>	Oswego, N. Y., U.S.....	1883
<i>Queen, I. J.</i>	Salineville, Ohio, U.S.....	1883
Quinn, John F.....	Edmonton.....	1883
Rose, W.....	Durham.....	1879
<i>Rose, W.</i>	Grand Rapids, Mich., U.S.....	1881
<i>Rutherford, J. G.</i>	Ohio, U.S.....	1879
Robinson, Robert.....	Tullamore.....	1866
Ross, J. R.....	Lucknow.....	1676
Richardson, Benjamin.....	Simcoe.....	1870
Rogers, David.....	Aurora.....	1873
Rogers, E. S.....	Bradford.....	1877
Rcid, John.....	Napanee.....	1872
Robinson, William A.....	Galt.....	1872
Richardson, John James.....	Meaford.....	1871
Rathwell, Isaac.....	Verna.....	1874
Riehardson, John C.....	Sunderland.....	1874
<i>Robson, G. L.</i>	Penn Yan, N. Y., U.S.....	1875
Ridd, William.....	Wingham.....	1875
Riddell, R.....	Cobourg.....	1880
<i>Reed, J. Hugo</i>	Georgetown, Pa., U.S.....	1882
Row, Wm. B.....	Rond Eau.....	1883
<i>Reed, S. G.</i>	Ruyschlvania, Ohio, U.S.....	1883

<i>Shalliol, P.</i>	Ohio, U.S.....	1880
Smith, C. P.....	St. Mary's.....	1880
Stevenson, P.....	Aurora.....	1880
Stephens, J.....	Collingwood.....	1879
<i>Somerville, Robert</i>	Buffalo, N. Y., U.S.....	1877
Sweetapple, C. H.....	Brooklyn.....	1869
<i>Severcool, P.</i>	Ohio, U.S.....	1880
Sanderson, J.....	Richmond Hill.....	1868
<i>Sutherland, Mr.</i>	Saginaw, Mich., U.S.....	1869
Stubbs, William.....	Orangeville.....	1869
Sterling, William.....	Bradford.....	1874
<i>Somerville, William</i>	Buffalo, N. Y., U.S.....	1874
Smith, Henry.....	Whitechurch.....	1873
<i>Stalker, M.</i>	Ames, Iowa, U.S.....	1877
Standish, John.....	Walkerton.....	1876
Stewart, W. W.....	Sandhill.....	1876
Stovel, D.....	Mount Forest.....	1877
Sweet, William.....	Exeter.....	1873
Skirk, Andrew.....	Port Colborne.....	1872
Smith, John Francis.....	Simcoe.....	1872
Spiers, John.....	Manitoba.....	1871
Swinburne, George.....	Montreal.....	1875
<i>Sutterby, H.</i>	Batavia, N. Y., U.S.....	1878
<i>Smeall, A. N.</i>	Seville, Ohio, U.S.....	1878
<i>Smithers, P.</i>	St. Louis, Mo., U.S.....	1878
Stevenson, A. K.....	Cobourg.....	1878
<i>Springer, U.</i>	Tipston, Iowa, U.S.....	1880
Shaw, W.....	London.....	1881
<i>Somerville, W. J.</i>	Buffalo, N. Y., U.S.....	1881
Steele, W.	Topping.....	1881
Sterling, W.....	New Hamburg.....	1881
Scanlon, W. T.....	London.....	1882
<i>Smith, C. L.</i>	Silver Cliff, Col., U.S.....	1882
<i>Sutherland, H. H.</i>	St. Francisville, Ill., U.S.....	1882
<i>Swingley, B. F.</i>	Oregon, Ill., U.S.....	1882
<i>Sallade, Jas. W.</i>	Reading, Pa., U.S.....	1883
<i>Schoonmaker, J. H.</i>	New York, U.S.....	1883
<i>Shimer, A. S.</i>	Shimersville, Pa., U.S.....	1883
<i>Stowe, C. W.</i>	Detroit, Mich., U.S.....	1883
Sine, M. W.....	Sterling.....	1883
Smith, Jas. F.....	Pt. Ryerre.....	1883
<i>Stallman, Jacob</i>	Rochester, N. Y., U.S.....	1883
Stewart, John G.....	Brantford.....	1883
<i>Stewart, Robt. W.</i>	Mt. Victory, Ohio, U.S.....	1883
<i>Stimpson, Geo. W.</i>	Macinaw, Mich., U.S.....	1883
<i>Taylor, J.</i>	Toledo, Ohio, U.S.....	1880
Taylor, C.....	Hornby.....	1876
Ten Eyck, Merritt Harriss.....	Thorold.....	1874

Tennent, E.....	Birr.....	1876
Thompson, A.....	Hamilton.....	1871
Thomas, G. W.....	Brantford.....	1881
Thomas, G. W.....	Owen Sound.....	1868
Thompson, Samuel J.....	Brantford.....	1872
<i>Thompson, Warwick M.</i>	Denver, Col., U.S.....	1872
Tenant, James Harkett.....	London.....	1874
Theobald, G.....	Teeswater.....	1878
Tanner, A. A.....	Drayton.....	1882
Tanner, W. J.....	Mount Forest.....	1882
Thomas, F. A.....	Paisley.....	1882
Thompson, A. E.....	Strathroy.....	1883
<i>Thompson, J. B.</i>	New York, U.S.....	1883
Upshall, John.....	Clinton.....	1868
Van Zant, Urias.....	Stouffville.....	1872
Vandervoort, L.....	Trenton.....	1882
Van Zant, Harry.....	Mongolia.....	1883
Way, B.....	Trenton.....	1880
Whitehead, J. P.....	Delaware.....	1880
White, Robert.....	Whitby.....	1879
Walker, W. St. Clair.....	Rice Lake.....	1875
Waistell, E. P.....	Arkona.....	1880
Wilson, J. H.....	London.....	1868
Wells, A. J.....	King.....	1868
<i>Whitehead, Robert Wilson</i>	Ohio, U. S.....	1874
<i>Welsh, John</i>	Ohio, U. S.....	1874
Woolley, Peter W.....	Aylmer West.....	1872
Wright, J. B.....	Rolehester.....	1876
<i>Wheat, L. E</i>	Seranton, Pa., U.S.....	1878
<i>Waddel, J.</i>	Columbus, Ohio, U.S.....	1878
Wells, E.....	Vittoria.....	1881
White, J.....	Whitby.....	1881
<i>Woodford, C. A.</i>	Rio, Wis., U.S.....	1881
<i>Walker, A. A.</i>	Dakota, U.S.....	1882
<i>Waugh, J. A.</i>	Pittsburgh, Pa., U.S.....	1882
<i>Waugh, W. J.</i>	Pittsburgh, Pa., U.S.....	1882
Wessel, A. E.....	Wooler.....	1882
<i>Whytock, J</i>	Buffalo, N.Y., U.S.....	1882
<i>Wrigglesworth, T.</i>	Duluth, Minn., U.S.....	1882
<i>Whitney Jonathan C.</i>	Allen, Mich., U.S.....	1883
<i>Wight, W. E.</i>	Milbury, Ohio, U.S.....	1883
<i>Woodhull, Ward</i>	Angola, Ind., U.S.....	1883
Young, Robert.....	Bowmanville.....	1871
Young, Matthew.....	Stayner.....	1873
<i>Young, D.</i>	Abiline, Kan., U.S.....	1880
<i>Yonkerman, D. P.</i>	Cleveland, Ohio, U.S.....	1882

GRADUATES OF 1883.

<i>Ardany, F., Jr.</i>	Pittsburg. Pa., U.S.....	1883
<i>Thorburn W. W.</i>	Holt, Michigan, U.S.....	1883
<i>McMaster, David</i>	Toronto.....	1883
<i>Cook, A.</i>	Glandford.....	1883
<i>Beattie, Robert</i>	Imelanville.....	1883
<i>Dornkeraler, W.</i>	St. Thomas.....	1883
<i>McClure, S. D.</i>	Sandusky, Ohio, U.S.....	1883

GRADUATES OF 1884.

<i>Anderson, S. G.</i>	Lambton.....	1884
<i>Ardiel, Robert E.</i>	London.....	1884
<i>Bailey, Charles M.</i>	Haverhill, Mass., U.S.....	1884
<i>Blank, G. G.</i>	Allentown, Pa., U.S.....	1884
<i>Butler, George W.</i>	Sterling.....	1884
<i>Burt, Daniel W.</i>	Hillsburg.....	1884
<i>Bradley, T.</i>	Gananoque.....	1884
<i>Bougham, M. L.</i>	West Lebanon, Ohio, U.S.....	1884
<i>Brown, James</i>	Guelph.....	1884
<i>Bogart, Sam. C.</i>	Chatham.....	1884
<i>Brodie, James W.</i>	Almira, Ont.....	1884
<i>Cruikshank, James</i>	Heathcote.....	1884
<i>Courtenay, Ed.</i>	Ashland, Ky., U.S.....	1884
<i>Dodge, P. C.</i>	Creston, Ill., U.S.....	1884
<i>De Witt, D. C.</i>	LaFayette, Ind., U.S.....	1884
<i>DeCow, L. C.</i>	Thamesville.....	1884
<i>Diekey, W. W.</i>	Newtonville.....	1884
<i>Dodds, W. G.</i>	Orangeville.....	1884
<i>Charles, Elliott</i>	Madisonburg, Ohio, U.S.....	1884
<i>Eisenman, Albert</i>	Louisville, Ky., U.S.....	1884
<i>Graham, Orn</i>	Port Perry.....	1884
<i>Green, M.</i>	Cesselton, Dakota, U.S.....	1884
<i>Hoffman, Sol. K.</i>	Shoemakerville, Pa., U.S.....	1884
<i>Hackett, John</i>	Victoria.....	1884
<i>Harthill, Adam</i>	Louisville, Ky., U.S.....	1884
<i>Hewitt, Fred</i>	Maple.....	1884
<i>Irons, I. B.</i>	Linesville, Pa., U.S.....	1884
<i>Kineaid, W. R.</i>	London.....	1884
<i>Kestell, Robert H.</i>	Simecoe.....	1884
<i>Livingston, Niles</i>	Jura.....	1884
<i>Laidelaw, W. R.</i>	Aylmer.....	1884
<i>Mason, R. M.</i>	Mono Mills.....	1884
<i>Mitchell, W.</i>	Mono.....	1884
<i>Murphy, Sam.</i>	Port Hope.....	1884
<i>McArthur, Duncan</i>	Ailsa Craig.....	1884
<i>Machan, Wm.</i>	Mitchell.....	1884
<i>Ming, Ed.</i>	Belleville.....	1884

Nicol, William.....	Beeton.....	1884
Ormsby, John F.....	Ancaster.....	1884
Parker, Frank.....	Maidstone.....	1884
Patterson, N. E.....	Bellantel.....	1884
Reid, J. F.....	Belleville.....	1884
<i>Rowell, H. E.</i>	Albion, N. Y., U.S.....	1884
Reed, Henry G.....	Georgetown.....	1884
Reycraft, Albert.....	Highgate.....	1884
<i>Sutcliffe, John</i>	Brooklyn, N. Y., U.S.....	1884
Steinburg, E. A.	Frankford.....	1884
Stork, Wm.....	Brampton.....	1884
Sharrard, E.....	Stonfullo.....	1884
Silverthorne, N.....	Summerville.....	1884
Sparham, Andrew.....	Caledonia.....	1884
Tennant, Alfred.....	Birr.....	1884
<i>Tiffany, L. C.</i>	Jacksonville, Ill., U.S.....	1884
Thompson, Charles.....	Zephyrs.....	1884
<i>Wende, John</i>	Mill Grove, N. Y., U.S.....	1884
<i>Weber, S. E.</i>	Greenlane, Pa., U.S.....	1884
Wilson John.....	Wingham.....	1884
Wilson James.....	Wingham.....	1884
Waldron, Harry.....	Ayr.....	1884

REPORTS OF CASES.

LACERATION OF THE PERFORANS TENDON AND THE SESAMOID LIGAMENTS ON THREE LEGS OF A GELDING.

BY RICHARD KAY, D.V.S.

The case was a black gelding, eight years of age, about 850 lbs. weight, light build and clean legs, owned by a gentlemen in the city and kept at Mr. Merklen's riding school, used for riding purposes only, but since last October has only been used sufficient for exercise. About ten days ago the horse became suddenly lame on the off hind leg, when a diagnosis of hock lameness was made. Thinking it to be of a rheumatoid character, local light cantharides blister was applied on the hock, and the animal ordered to be kept quiet in the stall till the effect of the blister had passed. About the fifth day, the parts being all dried, they were washed off with soap and water till no more scabs remained. About this time lameness showed in the fore extremities and gradually got worse till the animal was with difficulty able to rise after being

down. On account of there being no place to put up slings at that part of the stable, it was recommended to have the horse brought here to the hospital. The owner consented to the removal, which was accomplished with the use of an ambulance, the animal being kept secured on the floor. When after being driven in the stall he was relieved, he made an effort to get up, succeeding first with the front feet, then with the hind legs; but as soon as the weight was thrown on the hind feet, both toes turned up and stood upon the postero-inferior portion of the fetlock. In about half an hour the near fore foot assumed the same condition. A telegram was sent to the owner to get his consent to destroy, which was granted. On post-mortem there was found on the near hind foot a complete breaking down or laceration of the attachment of the flexor perforans on the inferior surface of the os pedis, also laceration of the lateral ligaments and opening of the metatarso-phalangeal articulation. The off hind foot was in a worse condition. The three inferior sesamoid ligaments were torn away from their upper attachment on the sesamoid bones, with the periosteum and a small portion of these bones adhering to the ends of these ligaments. The two lateral ligaments were also detached. The perforans attachment on the os pedis was also torn away, which allowed the foot to form a right angle with the metatarsal bone. On the near fore foot the lesions were similar to that of the hind feet—complete detachment of both flexors of the phalangers. The horse did not appear to suffer much pain. While standing on his feet in the above condition he greedily devoured a feed of oats that had been left in the feed-box of that stall.

EXTRACTS FROM FOREIGN JOURNALS.

HEMIPLEGIA IN A DOG—TREATMENT BY VEGETABLE ALKALOIDS.

By E. HENRY.

This patient had been paralyzed for seven days, and was given up by his owner. He had hemiplegia of the right side. The treatment consisted in the administration of dosimetric granules of arseniate of strychnia, hyosciamine, valerianate of zinc, and

mono-bromated camphor, given one at a time, every hour, with small doses of buckthorn syrup. The animal began to improve from the second day, and made a complete recovery after a week of treatment.—*Recueil de Medecine Veterinaire*.

[These dosimetical granules are very easy of administration, and answer the purpose very well in canine pathology. We have used them with great advantage and success, and in fact administer them altogether in our practice with this class of patients.—ED.]

INOCULATION OF GLANDERS TO DOGS.

By M. LAGUERRIERE.

From a series of experiments made by the author, he reaches the following conclusions:

1st. Equine glanders is transmissible to the dog by hypodermic inoculation.

2d. The inoculated points may cicatrize very rapidly and subsequently give rise, first, to simple wounds, and afterwards to true ulcerations. These same points may again form simple small and persisting wounds, which will ultimately ulcerate.

3d. Most ordinarily the inoculation produces a local trouble, the point of insertion becoming indurated on its circumference, and covered with large granulations, suppurating abundantly and bleeding very readily. The pus dries in thick brownish crusts, more or less adherent. These ulcerations are accompanied, more less, with lesions of the lymphatics.

4th. Local accidents may become generalized.

5th. From the experiments made it is shown that six months and more after a first positive inoculation, a subject has proved refractory to a new inoculation; that after about a year this refractory condition had become exhausted, and upon reinoculation the disease manifested itself by local and even general symptoms; that four months after this second inoculation, immunity again existed; that this immunity against glanders can be communicated to the dog, and that consequently *the animal is no exception to the law of immunity applicable to the prevailing classes of contagious diseases.*

6th. Some dogs are more or less refractory to the receptivity of glanderous virns.

7th. Negative results must not be accepted in an absolute manner. Positive ones only should be taken into serious consideration. In other words, *a negative cannot prove the non-existence of glanders, but a positive result always does.—Ibid.*

A CASE OF GENERALIZED TUBERCULOSIS IN A HEN.

By E. HENRY.

This case is published as an illustration of the possibility of the existence of tuberculosis *in birds*.

Symptoms.—Excessively lean condition; bones protruding through the skin in some parts of the body; comb of normal color and condition; eye dull and partly closed by the membrana nictitans; excessive weakness; feathers nearly falling off; a large tumor under the abdomen.

Post-mortem.—The tumor visible externally extended in the abdomen. It was twice as large as a hen's egg, tuberculous in its nature, and adherent to the terminal portion of the intestines. Its centre had undergone granulo-fatty degeneration, and contained a leaden-colored liquid of an offensive odor. The tumor was formed of smaller ones, tuberculous. The intestinal glands were tuberculous, and of various sizes. Near the kidney there was another large growth. The liver was full of tubercles; the gall bladder also full. The lungs were a mass of tubercles, in a state of mortification. The heart was small, flabby and pale; the pericardium free from serosity. The peritoneum was slightly infiltrated, especially where the large tuberculous tumors were situated.—*Ibid.*

DIAPHRAGMATIC CHOREA.

By M. CAGNY.

The author related before the *Société Centrale de Médecine Veterinaire* a case of clonic contraction of the diaphragm, to which he gives the above name.

The subject was a gelding, six years of age, which presented

the symptoms of those clonic convulsions, with the peculiarity that they corresponded to the beatings of the heart.

The treatment which he recommends is the administration of valerianate of atropia, in doses of 15 milligrammes, three times a day.—*Ibid.*

ENORMOUS MELANOTIC TUMOR OF THE INGUINAL REGION—REMOVAL—RECOVERY.

By M. ANDRIEU.

The animal was lame in the left hind leg, which was carried in abduction. In the inguinal region of that side was found an ovoid mass, testicular in shape, hard, adherent to the skin, and somewhat painful to the touch. The animal showing by the cicatrices that he had been castrated on both sides, the thought was suggested of a melanotic growth, or possibly a third testicle. In any case, removal was plainly indicated. This was effected, the animal being cast and secured as for the operation of strangulated hernia, and careful dissection being made over the tumor, which dropped out during the manipulations necessary to stop a venous hemorrhage which took place during the operation. The parts were brought together by sutures, and the animal went to work in ten days afterward. The tumor measured 21 centimeters in length and 9 in width. It was surrounded by a fibrous sheath, which divided the mass into two unequal parts. The interior was black, formed of a hard structure, unctuous to the touch, and coloring the fingers. No trace of testicle could be found in its substance.—*Archives Veterinaires.*

TREATMENT OF SPINAL CONGESTION IN THE HORSE.

By MR. LEELAINOCHE.

This author recognizes three forms of the affection referred to, viz.:

1st. A light form, with less sensibility to ordinary excitation, with dullness, a sleepy condition, and staggering walk; urine normal.

2d. A severe form, with abundant perspiration, a state of

anxiety, sudden lameness of one leg, until, the animal continuing to walk, becomes unable to stand, and falls to the ground. The urine is often red or blackish.

3d. The paralytic form, with the above symptoms, succeeded by complete loss of motion; urine generally normal.

The first condition subsides easily with a slight bleeding and saline purgatives.

The second requires, before anything else, absolute immobility, with warm applications over the loins, but no counter-irritants. Blisters are too slow in their action, and mercurial preparations useless. Strychnine and its compounds are contra-indicated. Drastics are doubtful in their results.

The third demands revulsive applications, the stronger the better, as frictions of oil of turpentine, with the treatment of the second form.—*Ibid.*

OVARIAN CYST IN A MARE—COMPRESSION AND OBSTRUCTION OF THE FLOATING COLON—DEATH.

By M. MARCHAEL.

April 25th, a five-year-old mare was taken with colic; appetite diminished; respiration accelerated; nostrils dilated; pulse hard and small; mucous membranes slightly injected; flank irregular and hard on the right side; constipation.

Treated for stercoral colic by purgative; rectal injections, sulphate of eserine and croton oil. She died on the 29th, four days after the attack.

Post-mortem.—The abdominal cavity exhibited, at the extremity of the right horn of the uterus, suspended to the round ligament, a soft, elastic tumor, elliptical in shape, and presenting on its inferior face a dark spot, produced by contact with the abdominal wall. The tumor being opened, was found to contain 11 litres of serous liquid, dark yellow in color, enclosed in a single pouch, covered at its surface with numerous blood-vessels. It weighed 12 kil., 500 grammes (about 13 pounds), and was simply the ovary. It pressed heavily on the floating colon, and caused the closure of that organ.—*Ibid.*

CORRESPONDENCE.

THE NATIONAL VETERINARY MEDICAL ASSOCIATION.

To the Editor of the American Veterinary Review :

It may not be out of place for me to make a few remarks concerning some objections raised by a subscriber to articles published in your journal in the June and July numbers, signed, H. F. James, V.S., St. Louis, Mo.

In the June number he absolutely refuses to have anything to do with any association that was not exclusively of graduates of recognized colleges, and asserts that State associations were tainted with the empirical element, mentioning the names of some distinguished practitioners who signed the conventional call at St. Louis, and whom he objects to. It would be well if the different State societies could be supported according to Mr. James' views. Possibly it could be effected, but the grand aim we are all after would be frustrated without the assistance of many respectable non-graduates, which I believe, nearly, if not all veterinary societies have among them.

There are many ignorant imposters practising veterinary medicine who are entirely unfit to be recognized and incompetent to pass before our State Board of Censors, but on the other hand we admit experienced practitioners who are intelligent and are respected in their community. The admission of members into our State associations is conducted with care and judgment and we admit or reject candidates according to their credentials and examination.

It is impossible for any body of veterinary surgeons, qualified by diploma only, to expect of Congress an act to protect them individually, nor will any law ever be passed without some compromise. It has already been tried and defeated, but by admitting respectable practitioners who have had extensive practice and are educated, into State associations, we will have a stronger hold, and we will there draw our line. Have them registered, as adopted in England, as existing practitioners, and register the graduates as such. Although a graduate myself of one of the first colleges,

and once of the same opinion as Mr. James, my views have since been changed, and I feel more lenient to self-made Vets., unless they are thoroughly uneducated and unprofessional in their conduct, but I know of many who are well read and have studied considerably and are successful practitioners, who are continually trying to improve themselves and with little encouragement would embrace the advantages of entering a college and completing their studies.

One of my objects in wording a bill as read before the meeting at Poughkeepsie, was to encourage discussion and stimulate members to assemble and have a petition properly drafted, agreeable to all, which would be settled by a majority of votes, and as the annual convention of the Nat. Vet. Med. Association will be held in Nov. this year, date of which will be published later, I invite the hearty co-operation of all members interested in the welfare of the profession to be present, connected or not with said association, and I take this opportunity of thanking my sincere friends who honored me by electing me to the position I hold as first President of the Nat'l Vety. Med. Association. By publishing the above, if not too lengthy for a space in your journal, it will perhaps clear the minds of some of its readers, and throw some light on those who stand in their own.

Respectfully,

L. V. PLAGEMAN, M.R.C.V.S.

VETERINARY SURGEON WANTED.

The following directed to Dr. Holcombe and Dr. N. H. Paaren, was sent to us recently.

SALINA, KANSAS, —.

DEAR SIR—There could be no better place for a *good* veterinary surgeon to locate than at Salina, Kansas. We have a large amount of fine stock in this county, with a thriving town of 4,000 inhabitants and no veterinary surgeon. Could you assist us in getting a good one. You would confer a favor on him and yours truly,

L. F. PARSONS.

A YOUNG MOTHER.

PROVIDENCE, June 30, '84.

Editor of the American Veterinary Review :

DEAR SIR—The following may be of interest to you and your readers.

Mr. A. G. Reede of Cowhesu, R. I., has a heifer which was born on April the 6th, 1883. She had a calf on May 7th, 1884, when therefore 13 months and a day old. The mother weighed 479 lbs. and the calf when dropped 46.

Yours truly, C. H. PEABODY, D.V.S.

ALUMNI ASSOC'N AM. VETERINARY COLLEGE,
TREASURER'S OFFICE, 141 W. 54TH ST.,
NEW YORK CITY, July 22, 1884. }

Editor American Veterinary Review :

DEAR SIR:—Enclosed you will find a pamphlet on the history of the Alumni of the American Veterinary College, a paper read before the alumni meeting, February, 1884, by W. Horace Hoskine, D.V.S. A resolution was passed to have said paper printed in pamphlet form and furnished to the members of the Association and their friends at a nominal price, which has been fixed at ten cents per copy.

The treasurer has to depend almost entirely upon the generosity of the members for its sale. Copies can be had by applying to the above address.

Hoping that you will give this space in your columns as a means of informing the Association and its friends.

W. J. COATES, M.D., D.V.S.,
Treasurer Alumni Ass'n of A. V. C.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The Comitia Minora of the United States Veterinary Medical Association held a special meeting at the American Veterinary College, July 2d, at 2 P. M.

Drs. Miller, L. McLean, Liautard, Burden, Robertson, Coates and Michener were present.—Absent, Drs. Stickney, Lockhart and Hoskins.

President Miller informed the Comitia Minora of its duty,—to name a place of meeting for the Association in September.

Dr. Robertson then moved that our next annual meeting be held in Cincinnati, Ohio. This was seconded by Dr. Burden.

After some remarks on this motion Dr. McLean moved an amendment and desired to substitute New York for Cincinnati. This was seconded by Dr. Michener. Discussion then followed, and the Chair after listening to remarks by all present, proceeded to put the amendment of Dr. McLean to vote. It was lost. By vote on the original motion it was decided to hold the next annual meeting in Cincinnati, Tuesday, Sept. 16th, '84, at 10 A.M.

The Secretary was instructed to ask a full attendance. Besides the number of candidates to be admitted there will be several papers presented to the Association. This meeting promises to be one of the best held for years.

Due notice will be sent to all early in September.

CH. B. MICHENER, *Sec.*

OBITUARY.

L. H. TOURTELLOTTE, D.V.S.

Dr. L. H. Tourtellotte, one of Idaho Springs' most honored and respected young men, met his death on last Wednesday, June 11th, about 1 o'clock P. M., in the Silver mine, on Seaton Mountain.

Dr. Tourtellotte, with Mr. Wm. Ireland, one of his co-owners, was down in the bottom of the shaft, which is about eighty-five feet deep, at work, Mr. Ireland being in the eastern corner of the shaft, with Mr. Tourtellotte on his left, within arms' reach, when a large scale, weighing from one and a half to two tons, gave way, and, in falling, struck Dr. Tourtellotte and Mr. Ireland, throwing them backward. Mr. Ireland, being near the edge of the immense mass, was struck on the left breast by a corner of the scale, receiving slight injuries. He was unconscious for a

short time, and, on recovering from the shock, he found Dr. Tourtellotte entirely buried. Mr. Ireland at once began, with as much energy as his feeble condition would permit, to remove the rocks under which his companion was buried. After he had succeeded in extracting Dr. Tourtellotte he found him to be dead.

Dr. L. H. Tourtellotte was born and raised near La Crosse, Wis. After receiving a liberal education there, he engaged quite successfully for a short time in stock raising, and finally concluded to study veterinary surgery, going to New York City and graduating at the American Veterinary College. About one year and a half ago he came to Denver, where he remained a short time, and from there came to Idaho Springs to superintend the Silver Glance mine, which position he has filled ever since satisfactorily. He was twenty-four years of age and honored and respected by all who knew him, and bore a most enviable reputation here and in every community in which he has lived.

WILLIAM SAUNDERS, D.V.S.

Dr. William Saunders, a veterinary surgeon well known in Boston, Salem, and throughout Essex county, died Wednesday, after a lingering illness, from diabetes. Dr. Saunders was exceedingly skilful in his profession. He never held public office, but was very prominent in the Masonic order, rising to the 32d degree. He was a member of Starr King Lodge, Washington Royal Arch Chapter, the Winslow Lewis Commandery, and the Ancient and Accepted Scottish Rite. He had also been identified with Odd Fellowship for the last forty years, and was a charter member of Fraternity Lodge of Salem, instituted November 18, 1846, and a Patriarch of Naumkeag Encampment. Dr. Saunders, prior to the war, took an active interest in the militia, and rose from the position of Captain of the Salem Mechanic Light Infantry to be Colonel of the old Seventh Regiment, M. V. M. He also held a commission on the Division Staff of Gen. Sutton. He was a member of the Ancient and Honorable Artillery Company, and of the Boston Lancers. He was an estimable citizen, and had a wide circle of friends. Dr. Saunders leaves a widow, to whom he was married a few years ago, but no

children. He was in the 67th year of his age, having been born in November, 1817, in Dartmouth, England. He came to America at the age of ten years with his father. The latter was also a veterinary surgeon, and found employment with the old Eastern Stage Company.

NEWS AND SUNDRIES.

GLANDERS IN KANSAS.—Glanders exists to some extent in Kansas.

FERTILE MULE.—An Austin paper reports that a mule foaled a colt in that town recently. This is a very rare occurrence.

ANOTHER. DISCOVERER OF THE YELLOW FEVER GERM.—Dr. L. Girard, of the Panama Canal Company, has successfully cultivated the yellow fever germ, and has inoculated many animals. He is about to publish his observations.—*Med. Record*.

U. S. QUARANTINE STATIONS.—The United States quarantine yards at Boston and New York are full to overflowing. Portland is empty and Baltimore is very nearly so. The yards at Portland have been thoroughly disinfected, and there is now no danger at that port from foot and mouth disease.—*Breeders' Gazette*,

FOOT AND MOUTH DISEASE IN SWITZERLAND.—Minister Cramer reports from Switzerland that foot and mouth disease among Swiss cattle greatly increased during March. Lung disease has entirely disappeared. Pleuro-pneumonia still prevails in Russia. Foot and mouth disease is prevalent in Alsace-Lorraine, in Baden, and in Italy, though it is not very widespread in either.—*Prairie Farmer*.

LEGISLATION CONCERNING TUBERCULOSIS.—A movement is on foot in Germany, subject to the decision of a commission of medical and veterinary experts, to exclude the meat and milk of tuberculous cattle from the market, experiment having shown that tubercle may be produced in dogs, cats, horses, hogs, and other domestic animals, by mixing tuberculous meat or milk with their food for several consecutive weeks.

CHOLERA IN CATS.—Mr. John C. Lucas refers in the *Lancet* of May 24th to an epidemic of cholera in cats occurring at Ahmednugghur and Sirror, and reported upon by the Government of Bombay. He refers also to another epidemic which occurred at Delhi in 1875. It thus seems to be established that cholera can at time affect pigs and cats. Yet Koch failed to produce the disease in them with his bacilli or by other means.—*Med. Record*.

FOOT AND MOUTH DISEASE IN CANADA.—*The Breeders' Gazette* states on authority that it is true that the foot and mouth disease has been discovered in the Canadian quarantine station; and adds that it has good reason to believe that all reasonable care has been taken by the authorities to prevent the infection from spreading. It was brought over, as in the case at Portland, with imported cattle, and by the same party who introduced it here.

PECULIAR CATTLE DISEASE.—Nova Scotia farmers are becoming seriously alarmed over the gradual spread of a peculiar disease among cattle, which originated about thirty years ago. It is not contagious in the ordinary sense of the word, yet slowly makes its way among the herds of the country. Two years ago the Dominion Government appropriated \$20,000 for slaughtering infected animals and quarantining those known to have been in contact with diseased ones. The effect has been beneficial, but the disease is not yet stamped out.—*Prairie Farmer*.

STATE AID TO AGRICULTURE.—The Massachusetts Legislature at its recent session appropriated \$63,600 for agricultural purposes, viz., Agricultural College, \$36,000; Agricultural Societies, \$17,200; members of State Board of Agriculture for traveling expenses, \$1,600; expenses of county meetings of Board, \$800; enforcing the laws against the adulteration of milk and its products, \$6,000; for investigating the causes of abortion in cows, \$2,000.

PROLIFIC COW.—I have what is considered a prolific cow by farmers and breeders of this section. She is a grade Durham, and will be five years old in June. She is the mother of eleven calves. At the first birth, before she was two years old, she had

three calves; at the second, three; at the third, three, and at the fourth, two. They were all born alive, excepting one. This beats the record as far as I have heard. The cow is above the average as a milk and butter animal, and is considered handsome.—*Country Gentleman*.

TO RECEIVE NO MORE HOGS FROM THE UNITED STATES.—The St. Paul, Minneapolis and Manitoba Railroad Company has been notified by the Collector of Customs at Winnipeg that no hogs could be imported from the United States into Manitoba for breeding purposes, and that the shipment of hogs into Manitoba is forbidden except under regulations providing for their immediate slaughter. For all hogs entered under such regulations a bond must be given as a pledge that they shall be slaughtered immediately.

PROPHYLAXIS OF RABIES.—Professor Sperino finds an analogy in the pathogenesis of syphilis and rabies in the following facts: 1. There is in each of these diseases a long period of incubation after the introduction of the virus; and 2, in many cases in rabies, as in syphilis, there is induration around the point of introduction of the poison, and in a few days an adenopathy arises in the lymphatic glands situated above the infecting part. Attracted by these resemblances, and by others of minor importance, the author tried the effects of mercury in eleven individuals bitten by mad dogs. The cases were seen from three to twelve days after having been bitten. Mercurial frictions were made to the affected limbs until the adenopathy had completely disappeared. None of the persons so treated was attacked with hydrophobia. Though no positive deductions could be made from so small a number of experiments, yet the favorable results obtained in these eleven cases would suggest the utility of further trials of Sperino's method.—*Giornale Italiano delle Malattie Veneree e della Pelle*.

THE EXTERPATION OF THE LUNG.—Among the novel experiments recently tried in Italy, the extirpation of the whole or a part of the lung seems the most remarkable. Fifty-seven animals—sheep, dogs, cats, and others were the subjects—had an entire lung extirpated, and thirty-five recovered. In twenty-three cases

the right lung was removed, and twelve recovered; the left lung was taken away in thirty-four, and there were eighteen recoveries. There were three cases of removal of the upper part of a lung, and one each of removal of the middle and of the lower lobe; all recovered. It is very doubtful if these experiments will ever be imitated on an extended scale, in human beings. Prof. Kronlein, of Zurich, however, in a case of recurring round-celled sarcoma of the sixth rib, recorded in the *Berliner klinische Wochens.*, of March 3, 1884, not only removed a large portion of the wall of the thorax, including the costal pleura, but also resected a portion of the lung which was the seat of a secondary sarcomatous mass. The insignificant bleeding from the lung stopped after bringing the edges of the wound together with the catgut sutures. In one month the patient was discharged cured.—*Phila. Med. News.*

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Veterinarian, Veterinary Journal, Journal de Zootechnie, Presse Veterinaire, Echo Veterinaire, Recueil de Medecine Veterinaire, Archives Veterinaria, Gazette Medicale, Revue Scientifique, Bulletin de l'Academie de Medecine, Clinica Veterinaria, Revue fur Thierheilkunde und Thierzucht, Annales de Bruxelles.

HOME.—Journal of Comparative Medicine, Medical Record, New York Medical Journal, American Agriculturist, Country Gentleman, Prairie Farmer, Breeders' Gazette, National Live Stock Journal, American Cultivator, Scientific American, Turf, Field and Farm, Spirit of the Times, Science.

JOURNALS.—Hearth and Home, Ohio Farmer, Practical Farmer, Home and Farm, &c., &c.

PAMPHLETS.—Manual of Acts and Orders in Council (Manitoba), Report of the Asylum for the Relief of Persons Deprived of the Use of their Reason (Philadelphia), Announcement of the College of Physicians and Surgeons (N. Y.), Announcement of Bellevue Medical College (N. Y.), Announcement New York Post-Graduate Medical School, History of the Alumni Association of the American Veterinary College.

CORRESPONDENCE.—C. H. Peabody, A. A. Holcombe, L. V. Plageman, W. J. Coates, F. S. Billings, N. H. Paaren, C. B. Michener, D. J. Dixon, J. Saunders, J. H. Very, J. J. Vanderrec, E. S. Bates, M. D., M. J. Tracy, G. Penniman.

AMERICAN VETERINARY REVIEW,

SEPTEMBER, 1884.

ORIGINAL ARTICLES.

REPORT ON THE RECENT CATTLE DISEASE IN KANSAS.

By PROF. JAMES LAW, of Cornell University.

(Continued from page 211.)

OUTBREAK IN YATES COUNTY, NEW YORK.

In the last week of February, 1884, a cow, belonging to Mr. J. Scoon, Bellona—

was taken with a gurgling or rattling noise in the throat when eating or moving. Subsequently the switch became dead or rotten and came off. Her feet or hoofs squeak like squeaking boots when she walks, but appear all sound. Appetite good as usual; eyes bright; no soreness about the mouth, but somewhat bloated about the bowels. Later, another was taken the same way in the feet, but without the other symptoms. [These cows were fed] all winter, mainly on corn-fodder that had more or less smut in it. About a month before the first subject was attacked she had been turned into corn-stubble, where she had access to considerable smutty corn and fodder.

A change to a fodder of clover hay, with a liberal supply of potatoes, put an end to all the symptoms, except the squeaking of the hoofs, which still continues, the soles having become detached from the quick.

COMPARISON OF THE RECENT DISEASE IN THE WEST WITH FOOT AND MOUTH DISEASE.

From an induction of all available cases in Kansas and Illinois, of the above cases in New York, and from the records of those happening in Iowa, Missouri, and Colorado, we find that

the recent disease of the Western States differs from foot and mouth disease in the fifteen counts presented in the following table, which is submitted as absolutely refuting the statement that foot and mouth disease exists in our Western herds:

PEOUILIARITIES OF FOOT AND MOUTH DISEASE.

1st. The foot and mouth disease is unknown, except as the result of contagion from a pre-existing case.

2d. In every invasion of a new country we can trace the channel of contagion from a previously-infected country.

3d. In a herd of cattle mingling freely in a yard or small pasture every animal is attacked within a week, and, with very few exceptions, all have completely recovered in three weeks more.

4th. The escape of a single bovine animal in an infected herd is rare.

5th. Sheep, goats and swine exposed to the infection suffer almost as universally as cattle.

6th. Does not attack the tail nor ears.

7th. Not usually preceded by diarrhea, though this may come on later.

8th. Feet at first affected in the interdigital space only; hoofs never shed except as the result of neglect of the preliminary inflammation; the bones of the feet never lost unless as the result of exposure to sand and filth and violent inflammation after the shedding of the hoofs.

PEOUILIARITIES OF THE RECENT CATTLE DISEASE IN KANSAS AND ILLINOIS.

1st. In no single herd can the first cases be traced to contagion from without.

2d. To no single diseased herd in either State can we trace any channel of contagion from an infected country.

3d. In the majority of the herds the disease has now existed for four months, and fresh attacks still occur in cattle that have occupied the same yard with the sick throughout.

4th. In some herds half the cattle escaped, though mingling freely with the sick. In Beard's, 4 only suffered out of 75. After the outbreak at O'Toole's, Kansas, he sold 50 cattle, yet they caused no extension of the malady among other stock. Hartwig had a heifer lost for fourteen days in Prebinow's sick herd, yet it conveyed no disease to his own on its return.

5th. Sheep, goats, and swine mingled throughout with different diseased herds, yet in no case contracted the disease.

6th. Gangrene and sloughing of the tail and ears not uncommon. Even when the tail seemed to have escaped, a close observation often detected a circumscribed purple slough at the tip.

7th. Diarrhea a very common precursor of the disease in the feet.

8th. When the hoofs are shed, the bones are usually detached with them, or shortly after, and when the disease extends higher up all the tissues (bones, sinews, and skin) early dry up and wither, up to a given circular line, at which point the whole mass is spontaneously amputated.

9th. In dairy cows the teats usually suffer, and though exceptionally spared are never so throughout an entire diseased dairy herd.

10th. The eruption on the mouth and teats is always distinctly vesicular (blisters); the same in the interdigital space if seen early enough.

11th. Is easily carried from herd to herd in the clothing of people visiting, as in the recent extensions from the foreign animals' wharves in England.

12th. Is easily carried from herd to herd by dogs and wild animals.

13th. Inoculations of previously unaffected cattle, sheep, and swine with the saliva of the sick always produce the disease. Exceptions are so rare that they need not be taken into account.

14th. The maintenance of an unrestricted trade from the localities in which this disease is widely prevalent almost inevitably carries this disease into the markets and railways cars and the different States supplied through these.

15th. Horses rarely suffer, but if they do the disease passes through all its stages and ends in recovery within three weeks.

9th. Only one case of eruption on the teats has been noticed (Keith's cow).

10th. While blisters have appeared on the diseased parts, they have been so inconstant that few have seen them. More commonly there are simple erosions or extravasations, followed by sloughing.

11th. Many stockmen have visited and even handled the diseased herds, but no extension of disease has been caused thereby.

12th. Rabbits and other wild animals ran about the yards and fields, but neither they nor dogs led to outbreak in the herds adjacent.

13th. Inoculation of one heifer and two sheep with matter from the mouth lesion of a heifer attacked nine days before produced no result. Inoculation of one calf, one sheep, and two pigs, with matter from the mouth lesion of Prebinow's calf (five days old) produced no result.

14th. For four months cattle, sheep, and pigs have been shipped freely from the vicinity of the diseased herds in the different States, yet no infection has been found in the markets nor elsewhere, though looked for in Saint Louis, Chicago, and New York.

15th. Horses attacked with this disease maintained a continuous slobbering for six weeks, or until the feed was changed.

AGE AS A SUPPOSED CAUSE OF THE DISEASE.

Having found that contagion was problematical, it may be well to notice a few other conditions that might be supposed to influence the development of the disease. That age was inoperative as a cause is shown by the following: At Keith's the yearlings were first attacked; at Hindman's the two-year-olds suffered, while the yearlings almost entirely escaped; at Beard's the suf-

ferers varied from two to ten years of age; at Prebinow's the three-year-olds suffered most, while no yearlings lost a hoof; while at O' Toole's there was one two-year-old, one six-year-old, and two old cows. In Illinois the same irregularity was noticed, and in New York the sufferers were mature cattle.

LOW CONDITION AS A SUPPOSED CAUSE.

Some newspaper reports emphasize the low condition of the cattle attacked, but there is abundant evidence that the herds first attacked were well fed and in good winter condition. Those that lost their feet, it is true, became rapidly and even extremely emaciated; but to put this as an etiological condition is to put effect for cause and to blunder fundamentally. Lowered vitality, from poor feeding, exposure, or disease, is doubtless an accessory cause, but not the essential and potential one.

FREEZING AS A SUPPOSED CAUSE.

Frozen feet has been a favorite explanation of this outbreak, and is very significant of the loose manner in which such outbreaks are accounted for. The three first herds attacked in the Neosho Valley had ample shelter in timber-lots, whereas the adjacent herds, denied such shelter, and far more thoroughly exposed to the inclemency of the weather, almost entirely escaped. The animals most severely attacked were on bottom-lands, while those on the more exposed uplands escaped. The stillness of the air near woods favored the growth of ergot, but opposed freezing. The prevalence of the disease in southern latitudes, rather than northern, opposes the idea of freezing. The feet have especially suffered, while the more exposed ears, teats, and tail, so subject to freezing in northern latitudes, escaped. The frequent existence of lesions in the mouth, even in the early stages of the disease, cannot be ascribed to freezing. The presence of diarrhea in the early stages of a majority of cases is not to be accounted for by freezing. The immunity of sheep, swine, and (in Illinois) goats suggests some other cause than freezing. Finally, the occurrence of new cases in April, after the temperature had permanently risen above 32° Fahr., puts the theory of freezing entirely out of court.

MUDDY YARDS AS A SUPPOSED CAUSE.

In the different herds the disease appeared and progressed differently as to the continuance of frost or thaw, as to whether the limbs were clean and dry, or plastered over with mud. In the one calf (Prebinow's) which I saw in the earliest stage of the disease, the interdigital spaces were clean, contact with mud having been practically impossible. Again, the immersion of the feet in mud could not account for the gangrene of tail and ears, nor for the lesions in the mouth.

IMPURE DRINKING-WATER AS A SUPPOSED CAUSE.

That the pond water supplied to certain herds was impure, having been, in part at least, the product of surface-drainage of the yard, is to be acknowledged. The specimens which I received from some of these ponds have a dirty-whitish opacity, and abound in diatoms, infusoria, micrococci, bacteria, and decomposing organic matter. The water had this further peculiarity, that when brought in contact with the blood of man or animal, it instantly dissolved all the red globules, leaving only a few white globules to be detected by the microscope. On chemical examination the water was found to contain a quantity of nitrites which have this peculiar destructive action on the blood; but as water from the hotel pumps at Neosho Falls contained bacteria in large numbers, and destroyed the blood globules in the same manner, yet had not proved injurious to the animals drinking it, any idea of the causation of the disease by this water must be dismissed. Moreover, this power of rapidly destroying the blood globules was found to be inherent alike in the water of Keith's well and of Falls Creek, Tompkins County, New York, the latter being supplied to many cattle that furnished no indications of this disease. It should be added that a special physiological action of the nitrites is to induce dilatation of the capillary blood-vessels, a condition apparently opposed to that of the shrunken, dried, and horny tissues of dry gangrene. Everything tends to exclude the water from the list of possible causes.

ERGOTED HAY OR SMUTTY CORN AS THE CAUSE.

In favor of the theory of ergot as the cause of the affection which has been investigated in the West, it may be stated—

1st. That similar results (and especially the dry gangrene of the extremities) are well known to occur from this cause.

2d. That on all the farms where the disease was observed, and where any of the kind of hay or cornstalks fed to the animals before the attack could still be examined, it was found to be badly affected with ergot or smut. In Kansas this was wild rye (*Elymus virginicus*), millet, and maize; in Illinois, red-top, (*Agrostis vulgaris*) and maize.

3d. That when the hay of last year's crop (1883) could be compared with that of the previous year (1882), as at Faunce's, it was found that the ergot in the former was much more abundant than in the latter.

4th. That animals, such as swine, running with the cattle but feeding mainly on corn (maize) and consuming little or no hay, escaped without exception.

5th. That sheep and goats, which are more dainty in their feeding, taking in food in small morsels with their delicate, mobile lips, and habitually rejecting whatever is unpalatable, invariably escaped, though running with the sick cattle and supplied with the same fodder. Cattle, taking in large mouthfuls with their long, barbed tongues, make no such selection.

6th. That in a number of cases the disease began during a period of intense cold, when the supply of drinking water was less constant and abundant in connection with the freezing of ponds and drinking troughs.

7th. That in different instances the herds were driven once a day to the pond where the ice had been broken, and in such cases it is well known that the tendency is for the leaders of the herd to stand for a time about the openings, drinking little on account of the cold of their bodies, of the air, and of the water, yet keeping back the weaker cattle, which in their turn tend to follow the herd, some without drinking, when a start is made back to the yards. It is well established that the action of ergot is always intensified by a deficient supply of water.

8th. Dry gangrene has been unusually prevalent in the different Northern States in the present year, and this, taken in connection with the excess of ergot in last year's hay, in cases

where a comparison has been made, suggests this as the essential cause of the disease.

9th. In some of the worst outbreaks (Keith's, Hindman's, Beard's, Kansas; Mason's, Founce's, Wheeler boarding house, Wetherholt's, Illinois), the localities were low and the ground damp and rich, while in several (Keith's, Hindman's, Beard's, Kansas; and Faunce, Kibler, Illinois), the places were more or less shaded by woods, both of which conditions favor the growth of ergot.

10th. That in one case at least (Faunce's) horses kept in the yards with the cattle and fed almost exclusively on the badly ergoted hay became unwell, lost condition rapidly, had sores in the mouth, and slobbered for six weeks until spring weather set in and the effect of the ergot was modified by a fuller allowance of corn.

11th. That in Effingham and adjacent counties the red-top hay, which was generally ergoted, was rejected by horses if they could get other fodder, and where it was used the animals did badly, lost condition rapidly, and in some cases slobbered. This hay was in such ill-repute that Mr. Moore, who keeps horses on livery at Effingham, told us this kind of hay would not bring over \$3 per ton, whereas ordinary Timothy hay sold at \$10 per ton.

12th. Mr. Mason, Jasper County, Illinois, informed us that in his district he knew of twenty abortions, or premature parturitions, in mares, a common result of the continuous use of ergot.

13th. Mr. Schlager, who practices veterinary medicine at Effingham, further states that there has been an unusual number of difficult parturitions in mares and cows in the present spring.

14th. At Pleasanton, Linn County, Kansas, on the Osage River also, Colonel Hamilton, State cattle commissioner, found that a number of abortions had occurred among cattle in the present season.

FACTS APPARENTLY OPPOSED TO CAUSATION BY ERGOT OR SMUT.

1st. The calves of Mr. Keith, of Coffey County, the first known to be attacked in Kansas, are alleged to have been fed on

sheaf oats and corn from their arrival, December 13, up to the period of their attack, December 23. It is not perfectly clear, however, that they had no access to the suspected hay during this period.

Mr. Keith himself acknowledged that "there might have been hay in the racks" during this period. Major Sims, secretary of the State Board of Agriculture, says that at the time of his visit (March 1) there was still standing a stack of hay built onto the fence of the corral so as to practically form a portion of this fence. It must not be forgotten that Hindman's cattle were taken sick fourteen days after they were put on the hay bought from Keith. Finally Mr. Keith himself testifies that three or four days after he received the calves he turned them into a small lot of three or four acres of corn stalks. Now, while we have no evidence of the presence of smut in this corn, nor in this sheaf oats, yet it is well known that this fungus (*Ustilago Maidis*) has the same effect as ergot in inducing dry gangrene, and as the sheaf oats have been used up and any remnants of the corn stalks have been completely stripped, negative evidence is lacking as much as positive. There is only the inference from common experience that such crops always have more or less smut, and from the proven abundance of ergot in the hay, implying a special potency of those climatic conditions which favor the growth of fungi in general, and those of ergot and smut in particular. This climatic influence is of course inoperative in the absence of the spores, but these being present there is the presumption of a corresponding abundance of smut as of ergot. Another point is that at the period of the outbreak the pond was low and completely frozen, and in place of breaking the ice Mr. Keith supplied the water by hand-pumping from a well, necessitating several hours of continuous work daily. It would not be surprising if, in some instances, the daily supply procured by this means should have been slightly defective.

2d. Mr. Beard fed his stock on hay very full of ergot, but which had been bought from Mr. Biddison, and the cattle of the latter, fed on the same hay, were not noticed to suffer. A fact of this kind cannot, however, negative the causative action of the

ergot, as that depends so much on accessories like the other feed, drink, and surroundings, that better conditions will sometimes render it comparatively harmless. Even in Mr. Beard's herd only four animals out of seventy-five suffered, and considering the amount of ergot in the hay, this is probably to be explained by the abundant supply of water from a rapid in the river which never froze over.

3d. The six experimental cattle placed on Mr. Keith's premises were attacked with diarrhea, transient fever, and an eruption in the mouth, though supplied with swamp hay quite clear of ergot. It must be taken into account, however, that they were first placed for seven days in a yard with Keith's cattle, where they had free access to the ergoted hay. The second lot of four experimental cattle, which were kept in the same yard with access to the ergoted hay for twenty-four hours only, had a slight and transient elevation of temperature on the third day, but no sores of mouth, feet, nor teats. The sheep that had no access to the hay at any time entirely escaped. The fact that the cattle suffered in degree proportionate to the opportunity for the ingestion of the ergoted hay strongly suggests this as the cause of the trouble.

4th. Certain calves suffered which³ were too young to have eaten any ergoted hay. Thus at O'Toole's a calf had its mouth badly affected, though kept in a park on the opposite side of the road from that occupied by the diseased cows and ergoted hay. Its sick dam was, however, admitted to suckle it twice daily. At Keith's a calf died with intestinal inflammation after sucking the sore teats of its dam, which suffered from sloughing feet, tail, and ear. Again, at Prebinow's, a five days old calf, nursed by a cow with feet in a gangrenous condition, had disease of the mouth and interdigital space.

In estimating the value of such cases it is noteworthy that Hensinger (Path. Comp., Vol. I, p. 484) states that "infants at the breast have often suffered more than the mothers, who had made use of the ergot." Bruce, speaking from the English standpoint, and with less experience of the disease, says that "infants at the breast are never attacked" (Dict. of Med). There is a

strong presumption that the calves suffered from the deleterious principles of the ergot secreted with the milk, and this view is corroborated by the absence of any results from any inoculations made with the morbid products of such cases. Had it been any septic or organized poison, there is a strong presumption that it would have perpetuated itself more or less in the inoculation wound.

5th. It has been objected to the theory of ergotism that no other animals than cattle (and in one instance horses) suffered. The exemption of sheep, goats, and swine is accounted for, as already explained, by their refusal of the ergot in the fodder.

6th. It is further objected that in case of ergotism there should have been abortions in the pregnant cows. This is not a necessary result of ergotism, as in one country or time the tendency is to a particular result—convulsions and paralysis, gangrene or abortion—and not all three of these in the one herd or in one district.

As we have seen above, however, the presence of an excess of ergot in the red-top hay of Illinois in the present year has been coincident with an unusual number of abortions in mares.

(To be continued.)

RESEARCH FOR THE BACILLUS OF KOCH

IN THE EXPECTORATE OF PHTHISIC CATTLE. APPLICATION
TO THE DIAGNOSIS IN DOUBTFUL CASES.

BY M. NOCARD.

The contagiousness of tuberculosis, for a long time suspected by certain practitioners, has been at length verified and established by the important experiments of Villemin, and, notwithstanding the somewhat fanciful interpretations given to some of the results of these experiments, it was rationally to be expected that one day or another tuberculosis would be assigned its natural position, and claim its place in the category of parasitical or microbial diseases. The able and interesting discoveries of Dr. Koch have now justified this expectation. The microbe of tuber-

culosis is a bacillus which is found in all the tuberculous lesions, and even in the products of the expectoration of phthisis. It can be cultivated indefinitely in artificial media, and when inoculated in the state of purity in various members of the animal species, reproduces exactly the disease from which it first proceeds, under every variety and kind of form. These are the three principal conditions necessary to the actual scientific illustration of the subject, and which involve the admission, as demonstrated, of the assertion that such lower organism, or microbe, is the only cause of this contagious disease. In other words, it is to-day an acknowledged fact that tuberculosis is functional in the bacillus of Koch, as anthrax is functional in the bacteridie.

One of the most important points of the discovery of Koch is the defining of the histo-chemical characters special to the tuberculous bacillus, which belong exclusively to it, and which have never been observed in any other of the known micro organisms. When placed in contact with a slightly alkaline solution of any of the numerous coloring matters obtained from aniline, the bacillus of Koch fixes the coloring matter with such a power that if submitted afterwards to the one-third solution of nitric acid it retains the given coloration, while all the other elements, whether cells or microbes, with which it may be mixed, lose it completely in a few minutes. Again, if, after the action of nitric acid, the preparation is placed in another coloring solution, all the elements of the preparation take this second coloration, with the exception of the bacillus of Koch, which alone retains the first*. In this curious reaction we have the proof that the micro-purulent sputa of phthisis always contains bacilli, and at times in considerable quantities; and that, amongst the numerous micro organisms that may be found in the sputa, the bacilli of Koch alone resists the discoloration by nitric acid.

From the publication of Koch's discovery (in April, 1882), a great number of observers have essayed to repeat and to apply his experiments in such a manner that humane doctors of the

* One exception, however, must be made in favor of the bacillus of *Lepra*, the action of which resembles that of tuberculosis; but their difference, both in size and form, at once establishes their distinction.

present time have become possessed of a new element of diagnosis for doubtful cases of tuberculosis—to wit: that the coloration of the bacillus in the sputa of the patient is conclusive in determining whether he is tuberculous. It is but two years since Koch published his discovery, and the cases may be counted by thousands in which cases of tuberculosis have been verified by the presence of the bacillus in the sputa of the patient. It is a fact, moreover, that, in a certain number of cases where the general condition of the sick, the progress of the disease, and all the stethose optical signs have seemed to justify a diagnosis of tuberculosis, the constant absence of the bacillus of Koch from the sputa has authorized and confirmed the reserve of the diagnosis, and the post mortem investigation has revealed the existence of pulmonary lesions, such as bronchial dilatation and pulmonary sclerosis, having nothing in common with tuberculosis.

May not veterinary medicine also derive its share of benefit from the important discovery of Koch? Animals of the bovine species, which are of such value in the point of view of human food, are, like its human victims, decimated by tuberculosis; but the identity of the two affections, the bovine and the human, has not yet been demonstratively established. Yet it may be possible that these two tuberculiform diseases are of different natures; that they spring from distinct causes; that the parasite around which the tubercle forms itself would not be of the same species in one as in the other. The researches of Colin, of Laulanie, of H. Martin, etc., have shown that foreign bodies very different, both inert and living, may give rise to the formation around them of tubercles, morphologically identical to the naked eye, and even to the microscope, in such a way that to-day every one admits that what characterizes the tubercle is *the specificity* (Renaut).

What connections exist between human and bovine tuberculosis? Does the bacillus of Koch exist also in the tuberculous ox? If so, can its presence be discovered in the purulent expectoration of the sick? Both of these questions admit of an affirmative answer. It is even so; the bacillus of Koch exists in the lesion of the tuberculous bovine, and Koch himself has found

it in twelve cases of phthisis pulmonalis examined by himself. The caseous centres contained them in quantity. But what is more important, in the point of view of diagnosis, is that the bacillus exists also in the products of expectoration, with all the specific characters indicated for that of human tuberclosis, and that the same manipulations are sufficient to render them evident. In doubtful cases, then, and these form the majority in the bovines, the veterinarian can, like the physician, establish the diagnosis with certainty, after examination of the bronchial mucosities of the animal under suspicion.

The phrase, "like the physician," may convey an exaggerated sense, for it is easy for him to obtain his patient's sputa for examination, while it is not so for the veterinary surgeon, for the ox does not expectorate. The purulent mucosities thrown off from the bronchial passages by the act of coughing, are swallowed (and to this, may it not be said in passing, is doubtless to be attributed the frequency and serious character of the tuberculous lesions of the mesenteric glands of bovines.) It is only exceptionally that in a violent act of coughing mucus is expectorated externally. But the difficulty can be obviated. By pulling the tongue outside of the mouth, deglutition is prevented, and if the animal is made to cough, the purulent mucosities expelled fall on the floor and can be easily secured for examination. Of course, we know how difficult it is to make a healthy cow cough, but it is not so with a sick one.

Here are preparations of bronchial mucosities obtained from a tuberculous cow* and treated by the Erlich method; you can observe the presence of considerable numbers of very small bacilli strongly colored in red, while the bottom of the preparation is either colorless or colored in blue or in brown, (blue of methylene or vesuvine).

* The best technical manner to follow, both the simplest and the most rapid, is that indicated by Erlich, one of Koch's students. With a saturated aqueous solution of oil of aniline, shake firmly 100 grains of distilled water, with 40 grains of oil of aniline, and filter. Of this take 100 grains, and of saturated alcoholic solution of fuschine, 1 cub. centim.: a shade of mucosity is spread in a thin layer between two glasses; each of these is then rapidly passed two or three times through the flame of an alcoholic lamp, to dry and coagulate

The cow which served for these preparations was destroyed for anatomical purposes. She was absolutely lean to an extreme, full of tubercles, even in the muscular masses—a curious condition; the udders were healthy, atrophied, but not tuberculous. I extracted a very small quantity of the milk, which was treated like the bronchial mucus; numerous preparations were made of it, but no bacilli could be detected. This fact agrees with the experiment of Bollinger, which proved that the raw milk of phthisical cows did not transmit tuberculosis except in the case where the udders were the seat of tuberculous lesions.

* * * * *

Since the 22d of May I have had occasion to see three phthisical cows. In one, the tuberculous masses were almost entirely calcified; in all three I observed in the mucus of the bronchia the presence of a large quantity of bacilli; they were counted by hundreds under the field of the microscope.

One of the cows used for the class of operative surgery seemed to me in the last stage of phthisis. She was a living skeleton, had repeated paroxysms of coughing, and ejected abundant mucosities; auscultation revealed a great roughness of

the albumen. A few drops of the solution of Erlich is then poured into a watch-glass, and over the surface of this liquid the glass thus prepared is placed in such a manner that the side on which the mucosity is shall be in contact with the coloring matter. The duration of this contact is from 12 to 24 hours, if one operates under the ordinary temperature; or it may be reduced to 15 or 20 minutes, if the watch-glass is placed over an alcoholic lamp and left until a slight vapor begins to show itself on the surface of the liquid.

The colored glass is then washed with distilled water, dipped into a solution of nitric to the third, just the time necessary for all coloration to disappear. This time varies, according to the thickness of the mucosity dried on the glass, from ten seconds to a minute. The glass is again washed with distilled water, then put for a few minutes into a concentrated aqueous solution of bleu of methylene or of vesuvine; washed a last time with distilled water, then dried; the glass, which had taken a handsome blue or marine color, is mounted with Canadian balsam. The bacilli of Koch appear strongly colored in red; all the other elements of the preparation, cells, nuclei or microbes, having a blue or brown coloration.

The glass can as well be mounted in the balsam as soon after the discoloration with the nitric acid; but then the bacilli only appear strongly colored in red, the remaining parts being colorless and nearly invisible. The double coloration gives the nicer preparation.

the vesicular murmur, and some dry crepitant and sibilant rales, disseminated over the whole extent of the lungs; percussion showed dullness in the lower third of both sides. A diagnosis of tuberculosis was made.

The examination of numerous preparations of expectorated mucosities revealed a great number of micro-organisms of various forms and sizes—bacilli, micrococci, isolated, germinated, in rods, or in zooglia, but not one of them had the reaction of the bacillus of Koch; all became discolored when dipped in nitric acid; all took the coloration, blue, violet, maroon, green, etc., put on the glass. No results could be obtained from many examinations. The autopsy proved the error of the diagnosis, and the truth of Koch's method. There was no trace of tuberculosis, but on the anterior median line appeared an enormous purulent pouch, surrounding the pneumo-gastric, having flattened the trachæ, pushed the heart backwards in atrophying the right ventricle. Neither the pus of the abscess, nor the bronchial mucosities, contained any of the bacilli of Koch.—*Archives Veterinaires*.

CASES FROM A NOTE BOOK.

BY T. B. ROGERS, D.V.S.

Injuries to the Lower Third of the Tibial Region and their Lesson.

In the summer of 1880 I was called to attend a horse suffering from fracture of the lower third of the tibia, arising, the owner said, from no apparent cause. The horse got a "little kick" over the seat of the injury two days prior to the leg breaking, and while being led out to water the displacement occurred. Of course the leg was fractured wholly or partially by the kick, displacement occurring afterward through muscular contraction. Recently I was called to see a valuable five-year-old mare, lame from a kick in the same region, and made a diagnosis of fracture without displacement; the owner, doubting the correctness of my opinion, allowed the animal to run at large in the meadow. Displacement occurred on the *twelfth day after reception of the injury* and the

mare is now under treatment. Many similar cases are on record. What is the lesson? *Any injury by blow or kick inflicted on the inner side of the tibia should be treated as a fracture, the animal placed in slings and a permanent bandage placed on the limb.* This is the more to be insisted on from the great tendency of these fractures to become compound either through destruction of vitality of the skin injured by the kick or blow, or its laceration by sharp ends of bone.

Pulmonary Hemorrhage.

I saw lately a severe case of hemorrhage from the lungs in an aged horse, the animal losing nearly two pailfuls of blood in a very short time. Being satisfied that internal treatment would have no influence on vessels having the calibre to bleed so freely, I trusted to heart faintness for the arrest of the hemorrhage, which occurred as soon as the pulse began to falter.

Melanosis in a two-year-old colt.

During the past summer I removed a nodule of melanotic matter the size of a walnut from a two-year-old colt that I castrated, and the animal has since had another form in the neighborhood of the umbilicus. This is the youngest animal I ever knew to be thus afflicted. His color was a dirty grey.

Castration Standing.

From the advance sheets of Prof. Liautard's work on animal castration I learn that he disapproves of this procedure. There is only one advantage in the operation. It is a "big free blow" for the operator. It is "butchery" not surgery; it does not admit of the operation being performed "lege artis." The operator cannot judge of the length he is cutting the cord or of the presence of adhesions, and, as Professor Liautard remarks, if the surgeon meets with an unsuspected hernia he is in a bad shape to deal with it.

Protracted Pregnancy.

A wealthy gentleman had in his possession for thirteen months a thoroughbred Kentucky mare, said to be in foal at the time of purchase. He insisted on her being pregnant, and at the end of

thirteen months called on a graduate of the Royal College for his opinion, said opinion being that a further examination would be necessary. Query—was the Royal College man intellectual or a practitioner for revenue only. Fifteen months have now elapsed and still that long expected foal is not on hand.

CONTRIBUTION TO OBSTETRICS.

BY C. L. MOULTON, D.V.S.

I sent to your museum some time ago a collection of foetal bones, that were more or less preserved after their long imprisonment in utero. The history of this case is as follows: A cow was purchased by the post milkman here, from a breeder in Kansas, three years ago, and driven here. She was a fine looking half-bred Hereford. The breeder said she had had one calf and was with calf again at the time of sale. Although having the appearance of being pregnant she failed to show any symptoms of parturition. She gained rapidly in flesh, came in heat regularly, and was frequently served during the past three years. All this time she kept in prime order and apparently enjoyed the best of health. This spring the owner becoming discouraged of ever breeding her, she was reluctantly sold to the butcher.

In removing the intestines the butcher happened to take hold of the uterine horns, and said he thought it was filled with gravel. He removed the organ entire and brought it to me. I found the uterine walls very much thickened, and in the very small space constituting the cavity of the uterine horns, was a collection of dirty black looking fluid, very foetid. In this fluid I found the bones I sent you. I can readily understand how the soft parts could be absorbed, but what seems remarkable to me is that the cow should have enjoyed such good health and kept in such a plethoric condition all this time.

Another experience I have had is of much interest to me. I was called to see a three-year-old heifer, with first calf, and said to be seven months gone. I found her very uneasy, continual pains, and a large tumor protruding from the lips of the vulva.

An examination showed me that the os uteri was at the lowest point of this large red protrusion. The os was very rigid. I could not even get one finger into it. I ordered a narrow stall built to raise the hind parts of the cow some eighteen inches higher than the forward parts. The tumor was bathed at first with warm, and afterwards with cold water. Ordered tinct. opium in one ounce doses every six hours, and then left her, promising to call the following morning. I found on my second visit that the protrusion had entirely receded. The os was easily dilated with ung. belladonna. A dead foetus was found with its abdomen enormously distended with gas, and in such a state of decomposition that I readily ruptured the abdominal walls with my fingers. After the gas was released there was no further trouble in delivery. I removed the placenta and sponged the uterus with carbolized warm water. In a few days the mucous membrane lining the vagina sloughed and came away in large patches. I dressed the parts with carbolized oil, and the cow made a good recovery. I was very careful at the time and used plenty of carbolized oil on my hands and arms, did not have a wound of any kind on them, but nevertheless I contracted a severe case of blood-poisoning. Have several scars on my right arm by which to remember that case.

EDITORIAL.

ANNUAL MEETING OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

In a few days more the United States Veterinary Medical Association will enter upon the twenty-second year of its existence. On this occasion it is proposed to celebrate the lapse of its majority by changing the place of meeting—which, indeed, has become a necessary measure and a natural consequence, not only of the growth of the Association itself, but also of that of the profession at large.

At the organization of the Association, which took place in the old Astor House, New York city, and where the constitution and by-laws were signed, the names placed on record for the for

mation of the first organization of the kind in the United States were but few. But a good record it was for all, and especially for those self-educated men who were thus acknowledging their appreciation of the profession they had chosen. Little by little, however, and year by year, the Association as it grew older enlarged its list of members, and so increased its catalogue, that to-day, in visiting any portion of the country, whether in the North, the South, the East or the West, the members may be sure of finding a glad welcome from their fellows who hold a certificate of membership. Her motto ought to be "Union," for since her foundation it has always been her prime endeavor to unite the members of the profession in a true spirit of brotherhood. Thus we trust that the visit to Cincinnati, in order to celebrate the anniversary, will not fail to bring many worthy members of the profession into friendly contact and useful acquaintanceship.

The growth of our special department of medicine in the United States has been so great within the last twenty years that many sections of our continent are now provided with competent veterinarians, which heretofore were compelled to leave their ailing animals to the care of ignorance and charlatanism. While a few years since the veterinarians of the country could be counted by two or three hundreds, our recent statistics show over a thousand names in our ranks. Are not these all-sufficient reasons why the United States Veterinary Medical Association is by a natural law, so to speak, crowded beyond the sphere they had heretofore occupied, and why they are justified in going to meet their friends in the metropolis of Ohio?

We may expect that at the meeting in Cincinnati some difficulties will present themselves in the matter of organization. The question of admission to membership may not be carried out as promptly as some candidates would choose. The presentation of credentials from veterinary societies will probably be thought necessary, and ought to be, previous to the opening of the regular meeting; the Comitia Minora ought to be ready to work at an early hour, and the Board of Censors should be prepared to report at the opening of the meeting. If the organization is well managed, we shall probably be able to record a grand meeting.

All the veterinary associations we know of in the East have promised to select their delegates, and there cannot be a doubt that our Western *confreres* will appear in goodly numbers to meet them. Let us, then, have a good and a large meeting; and if the officers have respectively performed their duties, we are sure to have also a very interesting one.

THE SPREAD OF CONTAGIOUS PLEURO-PNEUMONIA—ITS
APPEARANCE IN ILLINOIS.

We hear the startling announcement, "There can be no longer any doubt that contagious pleuro-pneumonia has broken out in Illinois." The lofty Alleghanies, whose ridges, it has been boastfully claimed, formed an impassable barrier to its westward progress, have not hindered its transit, and the West is at length suffering from the presence of the dreaded infection. Acting Commissioner Carman has telegraphed to "take all means deemed necessary," but the absorbing question confronts us, can any means be expected to succeed, in view of the reported fact that already *twenty-one* animals from infected herds have been carried into other States?

The facts attending the history of the connection of the veterinarians of the United States with this disease are of very peculiar character, and cannot fail to serve, to a great extent, to make the profession in America a laughing-stock for the veterinarians of other countries.

That contagious pleuro-pneumonia existed at some points in the New England States, was a fact within the knowledge of all. The commission of Gen. Patrick and Prof. Law and his able body of inspectors had established it beyond the denial of the strongest skepticism; but its limitation within the Eastern territory had been proved by the Commissioner of Agriculture, and the report of Prof. C. P. Lyman. But to what advantage were their labors, and what has been the fruit of the liberal outlay of money involved in the work, beyond the organization of the U. S. Treasury Cattle Commission, with Prof. J. Law as the president, to stand sentinel over the evil, as well as to guard against the importation of other animal diseases?

The Bureau of Animal Industry, with Dr. E. Salmon, its chief, have lately entered upon the work of taking a census of the sickly animals which may be found in the States hitherto known to be infected.

The Brooklyn Board of Health is fighting again its periodical battle with the local swill-milk associations upon the question of the existence of contagious pleuro-pneumonia in the long-existing and too well known infected districts in that city. The Board is supported by Prof. L. McLean and other veterinarians, while the swill-milk interest employs Prof. R. W. Finlay and some others as advocates and defenders.

And what is the gist of all this ?

The U. S. Treasury Cattle Commission has, in all probability, been prevented from more closely watching the progress of pleuro-pneumonia by a point of official etiquette, in the fear of interfering with the Department of Agriculture, under which the Bureau of Animal Industry is laboring (?). And this bureau has been unable to prevent the march of the disease westward by the pressure of a more important affair, in the East, to wit, the solution of the inquiry as to what may be the exact number of pleuro-pneumonia cows inhabiting New York, New Jersey, and neighboring States. It is thought to be important to know whether a given region contains just one hundred, or only ninety-nine indisposed cattle, for in the first case Congress may be relied upon to appropriate funds to sustain a conflict with the enemy, but not if feeling only the pressure of an odd number with only two figures. It is interesting to inquire what may be the value of a census of sick cows, which, in order to be effective in respect to inducing public aid and exciting public alarm, must be governed by the theory that ninety-nine cases may be ignored as to the danger of communicating infection to other cattle, and only when the number requires three figures to write it, it becomes a stupendous economic evil and fearful hygienic scourge.

As to the Brooklyn Board of Health, their action will at least show once more that there are veterinarians in these infected districts who are faithless as to the existence of contagious pleuro-pneumonia in that city, and are, on the contrary, willing to look

upon animals sick with lung affections as never being ill with any but mere sporadic inflammatory disease of the air-passages, and who thus place themselves on the enviable list of those who refuse to believe that the disease exists in that district.

Result of all these :—

“ There can be no longer any doubt, contagious pleuro-pneumonia has broken out in Illinois.”

SANITARY STATEMENTS AGAIN.

We have time and again called upon our readers, and upon members of the profession also, for facts relating to contagious diseases, and we have always pointed out to our friends the necessity for doing so. In fact we have tried to show how this is a duty due not only the profession, but to the public at large. We are satisfied that from the publication of sanitary statements of the true extent of the contagious diseases of domestic animals, a great deal of public, national, and even international good might be derived. That we are not mistaken is shown us by the letters we receive with the return statements, in which the writers always acknowledge the necessity of such publication—letters and statements for which we offer our thanks to all who have sent them.

We have not, however, with very few exceptions, received the statements of the veterinary officials, nor of State veterinarians, nor of veterinarians connected with boards of health. We have not, indeed, supposed that they would take the necessary trouble. Working for the profession is a different affair from that of governmental offices. But at least, if we cannot give to our statements the strength and completeness they would possess if they were, so to speak, “official,” we will be able to give them a certain indorsement of official function, since, instead of being made by a few, they will come from a majority of the veterinary surgeons of the land.

We once more, and will again, urgently ask our readers, and in fact all veterinarians, to mail us monthly, or every three months, a statement of the contagious diseases they may have encountered in their practice, and hope that official veterinarians

also will realize the fact that our object is not personal, and that they will yet come to our assistance in despite of red tape restrictions.

Our report for the first semester of 1884 is published in this issue. Incomplete as it is, we hope it will prove interesting and useful.

EXTRACTS FROM FOREIGN JOURNALS.

TRANSMISSION OF HUMAN DIPHTHERIA TO FOWLS.

BY DR. L. ROTH.

The doctor has made the transmission of human diphtheria to fowls the subject of some interesting observations. While treating two children in a family affected with scarlet fever complicated with diphtheritic sore throat, he one day noticed in front of the bed of one of the children, and on the floor, a long band of epidermis, and was told that others had been expelled at previous times since the period of desquamation, which had been thrown away and swept upon the manure pit in the yard, where some thirty hens and six young roosters were kept. Six days after, ten of the hens were found suffering with diphtheria, with all its characteristic symptoms, and notwithstanding the isolation to which they were subjected, all the others became more or less affected. The mortality was about six per cent.—*Wochenschrift für Thierh.*

A CASE OF SPASM OF THE STERNO-MAXILLARIS MUSCLE IN THE HORSE.

BY M. J. BUHLER.

This rare affection was observed by the author in an animal whose history was, that several days previous he had suddenly stopped eating and remained for several minutes with the mouth open; showing the same symptom subsequently, also while at work. During these manifestations the superior parts of the sterno-maxillaris were spasmodically prominent, and projected above the parotid glands. These were of several minutes' dura-

tion, and were followed by immediate relief, which allowed the animal to continue eating. The treatment consisted in frictions along the length of the muscle, of a liniment made of 60 grammes of chloroform and 150 of spirits of hyosciamus.—*Schweizer-Archiv für Thierh.*

BRIGHT'S DISEASE IN THE DOG.

BY M. A. MATHIS.

After a summary of the literature on this subject, and a reference to the names of various writers, the author gives the history of the patient as follows: The animal had already been under our care for an attack of endocarditis, from which he recovered. Since that time, however, he has lost his strength, becoming lazy, and complaining at the slightest movement; and sometimes persisting in constantly keeping near the fire. For the last few months his appetite had been capricious, and he had become much constipated. He micturated very often, a little at a time, every hour, then every half hour, and is now a regular annoyance to his owner on that account. His thirst was very great, and he had lost considerable flesh. His old endocarditis has left no mark behind; his pulse is 110; temperature, 39°; lungs and liver and other intestines apparently healthy. Diabetes was first suspected, but an examination of the urine failed to reveal the presence of sugar, and a diagnosis of Bright's disease was made, and a fatal prognosis given. The animal was then abandoned by his owner and destroyed. The lesions found in the kidneys are summarised as follows: 1st. Arteritis and periarteritis, well marked and generalized; 2d. Sclerosis, by propagation of the vascular lesions; 3d. Atrophy and degeneration, with disappearance of the epithelium, occlusion of the tubuli, and formation of miliary cysts—all of which constitute the lesions found in Bright's disease.—*Journal de Zootechnie.*

A CASE OF PHARYNGITIS, WITH PROBABLE ALTERATION OF THE PNEUMO-GASTRIC.

BY M. BAUDON.

In May last the author was called to see a gray stallion, which the day previous had refused his food; his mastication was in-

complete, he drank freely, the liquid not returning by the nostrils; fœces hard and dry; bones flexible; pressure on the larynx produced an avorted weak cough; there was no swelling of the throat; respiration slightly difficult; sounds on auscultation normal; same discharge, yellow and reddish, from the nose; pulse irregular and soft, 58 per minute; mucous membrane not injected, but yellowish; general appearance good; locomotion normal.

Diagnosis.—Uncertain. Pharyngitis, or perhaps pneumonia of the anterior lobes.

Treatment.—Counter irritants to the throat; seton to the chest; electuary of antimony. After three days of this treatment the animal suddenly fell and died without apparent pain.

Post mortem.—The following lesions were found: lungs congested, not hepatized; trachea and bronchia contained white spumous mucosities; liver larger than usual, pale, slightly yellowish, normal in consistency; heart black, syrupy blood in the right ventricle, fibrinous clot in the left, structure normal; kidneys apparently sound; intestines not examined; muscles pale and colorless; throat, two tumors were found at the origin of the œsophagus, of the size of a hen-egg, resting on the infero-posterior face of the guttural pouches, and on the superior face of the larynx, œsophagus and origin of the trachea—their interior seemed to be formed of several small abscesses, and contained a yellowish white pus of a fetid odor.

Mr. A. Mathis considered these as postero-pharyngeal lymphatic glands which had undergone degeneration, the diseased process of which had probably involved the pneumo-gastric nerves.—*Ibid.*

COLICS—VOMITING—RECOVERY.

BY M. GAVARD.

A Normandy mare, six years of age, suffering with colics for two hours, and treated by the alkaloids of the dosimetrical school, was shown to the author on the 12th of February. Her loins were hard; mucous membranes injected; arteries hard; abdomen heavy and hard forward, and not tympanitic; colic pains, mild.

She was given an electuary of spirits of turpentine and croton oil. Half an hour after, she manifested all the symptoms of vomiting. Careful examination of the left jugular groove failed to reveal the existence of œsophageal jabot, but gave rise to signs of pain, and were soon accompanied by the rejection of a certain quantity of an acid liquid by both nostrils. This vomiting was repeated several times. Expecting a fatal termination, the animal was left alone, and she soon laid down, moving her extremities violently at times, then suddenly, after a strong effort, remaining perfectly quiet. As the nurse who attended her went to remove the surcingle and the blanket which covered her, she suddenly rose, and seemed to have entirely recovered. She has since then been at regular work, and enjoys excellent health.—*Ibid.*

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The twenty-second annual meeting of the United States Veterinary Medical Association will be held at the Grand Hotel, Cincinnati, Ohio, on Tuesday, Sept. 16th. at 10 A. M.

It might be stated, as an extra inducement for Eastern veterinarians to attend this meeting, that on the night of Sept., 17th the *Order Cincinnati* will have a grand parade. The Cincinnati Industrial Exposition will also be in progress at that time. It will be well, on account of the crowded condition of the hotels, to secure rooms in advance of Mr. Gilmore, Grand Hotel, Cincinnati.

In reference to routes west, Dr. J. Meyers, Jr., writes me that in his opinion the New York, Pennsylvania and Ohio Railroad is the shortest; the New York Central and Lake Shore is the nicest route, and the Baltimore and Ohio Railroad, for natural scenery, hills, valleys and rough country, is most notable.

CH. B. MICHENER, *Sec.*

CORRESPONDENCE.

FISTULA AFTER ENTEROTOMY.

Editor Review:

In the July number of *REVIEW*, H. F. James reports a case of fistula of the colon as a sequel of enterotomy. If I understand Mr. James rightly I think he does not hold the operation in very high esteem. I too have had bad results, but only in a very small majority of cases. I think there is no operation that has saved the lives of so many horses, nor one that may give the veterinary surgeon so much credit as enterotomy properly done.

I could not give the number of cases punctured, but for the time I have been in practice and the amount done I have punctured a great many horses, both from the side and from the rectum, and have never had cause to regret making the operation. I have had trouble in but four operations, in two cases a simple abscess. The first a sorrel pacing horse seven years old, used as a road horse. One week from the time of puncturing I found him exhibiting colic pains; on examination I found the site of puncture somewhat swollen but no fluctuation. I was able to introduce a fine probe into the original wound and found deep seated pus; made a large opening which gave immediate relief; wound healed; had no further trouble.

Second case, a gray mare seven years old, used for livery. Abscess showed three days after puncture. This abscess was superficial and after being freely opened made rapid recovery.

Third case, a large gray mare eight years old, used in a coal cart. Within six months had three severe attacks of acute indigestion, the last attack followed by impaction. In the first attack she was punctured three times, the second four times, the third attack, four times during the night and again at nine o'clock the following morning; each time on the right side. Bowels did not move until the fourth day, after that the mare improved rapidly, until the evening of the sixth day, when she took a chill. When I saw her she was dull, limbs cold, pulse accelerated, temperature $106\frac{1}{2}$, found large superficial abscess about the centre of space

between ilium and last rib high up (site of puncture); opened abscess. Gave spts. vini., trec., ʒ i ; spts. aeth. nit., ʒ ii as a drench in one quart of water; also quinine sulph., ʒ ii , in bolus. Mare did well for three days, when another abscess formed directly over point of ilium showed similar symptoms, and was treated the same as the first. Mare soon recovered.

Fourth case, a small bay gelding twelve years old, used as a family horse; he had not been out of stable for several days when called to see him. I found him with some pain and somewhat bloated. The case was obstinate, did not change much for six hours, when tympanitis became more prominent. I then punctured and got a good flow of gas, the horse soon recovering. Saw no more of the horse for five days, when I was called in to see him. Found horse in apparent good health, except that trocar wound had not closed, and it had a discharge of whitish matter. This surprised me, but with some difficulty I passed the whole length of a six-inch probe into the opening. Then I diagnosed fistula of the colon or cæcum. Treatment consisted of charging a long fine pointed syringe with a concentrated solution of argenti nitras, passing it (as near as I could guess) nearly to the intestine, when I slowly discharged while withdrawing it. Had no further discharge except a little pus. The external part of fistula was very obstinate but finally yielded to treatment.

While I heartily agree with my friend Mr. James in saying, Let us have some of the bitter as well as the sweet, I must say that in regard to the results of enterotomy the sweets predominate over the bitter by a large majority.

Yours,

WM. R. HOWE, V.S.

THE NATIONAL VETERINARY MEDICAL ASSOCIATION.

To the Editor of the American Veterinary Review :

The letter published in the August REVIEW from the pen of Dr. Plageman, is a sufficient excuse for again bringing the State association question before the profession. Dr. Plageman is evidently endeavoring to smooth matters after a fashion, but he

carefully keeps from any comments on the important points at issue, viz., whether the regulars should have the privilege of calling conventions and deciding on the proper means of advancing the interests of the profession, or should the irregulars be allowed to take the initiative in such matters, together with the proposed licensing powers of these associations, and the attendant evils which I have fully pointed out. He asserts that I object to some *distinguished practitioners* (the italics are mine), who signed the conventional call at this city. Now, I am well aware, as are many others, that there are many non-graduates whose scientific attainments and skill as practitioners justly entitle them to a place in our ranks, but, as I will soon try to show, Dr. Plageman's attempt to make this comparatively small body of gentlemen act as a leaven for the rest, is singularly unhappy. One distinguished practitioner here gravely informs a certain party that there was no such thing as a coronal, pedal and navicular bone being contained in a horse's hoof; there was simply one "solid chunk" of bone. "Distinguished practitioner" No. 2 is brought face to face with a bad outbreak of glanders and farcy in a drayman's stable, symptoms too plainly marked to justify a mistake, and sores all over body. He proceeds to treat by smearing animals with liniment, and it is left to the common sense of a horse-shoer, making no pretensions whatever to professional knowledge, to suggest that a few musket balls would be more appropriate in their treatment than greasy washes, which suggestion is in time adopted. "Distinguished practitioner" No. 3 brings a horse to be shod after cure of sand-crack; shoer hooks and draws out gntta percha composition with which said crack had been *cured*; case redounds greatly to the credit of No. 3, of course. "Distinguished practitioner" No. 4 is called in to find why a certain animal is off its feed; the truth of the matter is bad shoeing and very painful corns, which after a hard day's battering over the pavement, makes the animal so sore that he lies down as soon as possible after getting into the stable: Diagnosis—neurralgia of jaws, and is blistered therefor. "Distinguished practitioner" No. 5 has an infallible cure for tetanus: bleeds from the nose, tip of tail, and all four coronets—one drop of blood from each place is

sufficient; object, to keep up the circulation. "Distinguished practitioner" No. 6 is entrusted with case of purpura; characteristic swellings and petechia all there. *Diagnosis*—dropsy of the kidney. *Treatment*—setons through swellings and glauber salts. And so I could go on until I had cited an infinity of such cases as I am personally aware of, and both my readers and myself were tired out. I quote from the letter: "The admission of members to our State associations is conducted with care and judgment, and we admit or reject candidates according to their credentials and examinations." From what we know of the formation of the Missouri State Association, the care and judgment must have been exercised with penurious frugality, as we say out west. If the credential and examination parts were adhered to, will Dr. Plageman or some one who knows the ins and outs of the affair, kindly formulate what in future are to be recognized as credentials, and also give us a list of examination questions, percentages made on such, and other points of interest. What are the responsibilities of that mystic body, the State Board of Censors? We want to keep abreast of the times, and therefore watch professional institutions with the greatest interest. Our platform remains as before. "We refuse to believe that the proper way to advance the interests of the profession is to form a coalition with quackery." The distinguished practitioner theory won't hold water, and instead of Dr. Plageman throwing a clearer light on the subject, the only conclusion I can arrive at, is that we are about in the same place we started from.

H. F. JAMES, V.S.

COLD DOUCHE IN COLIC.—Dr. Tepliashin (*Vratch*) speaks very strongly as to the beneficial effect of cold irrigations applied to the abdomen in colic, by directing to the painful region a thin stream of cold water from a teapot lifted a foot or a foot and a half from the abdomen. He has seen rapid relief of even the most excruciating pains follow from this when the internal administration of opium and subcutaneous injection of morphia had failed.—*Gaillard's Medical Journal*.

CONTAGIOUS DISEASES.

SEMESTRICAL STATEMENTS, ENDING JULY 1st, 1884.

STATES.	Anthrax.	Contagious Pleuro- Pneumonia.	Foot and Mouth Disease.	Glanders and Farcy.	Hog Cholera.	Hydrophobia	Texas Fever.	Tuberculosis
*1 Alabama.....					13	7	57	1
2 Colorado.....	20			5			30	
3 Connecticut.....				50	100			2
4 Dakota.....	33			36				
5 Delaware.....				6	33	2		
6 Illinois.....	14			7	24	2		8
7 Indiana.....	4				40			2
8 Iowa.....	49			32	128			5
9 Kansas.....	30			80		1		
10 Maine.....			44			3		1
11 Maryland.....		3		12				
12 Massachusetts.....				50			11	1
13 Michigan.....						2		
14 Missouri.....				2				5
15 New Hampshire.....								
16 New Jersey.....	4	133		73	49	4		24
17 New York.....	16			86	40	4		7
18 Ohio.....				6		2	2	1
19 Pennsylvania.....	14			7	24	6		8
20 Rhode Island.....	1							
21 Texas.....				6		1	7	1
22 Virginia.....				11	3			5
23 Wisconsin.....								
24 Wyoming Terr.....	None.			11		1	Few.	
Total.....	185	136	44	480	454	35	117	71

DISEASES FOR WHICH NO RECORD WAS KEPT.

Contagious Pleuro-Pneumonia in New York State and Maryland.

Texas Fever in Kansas and Maryland.

Hog Cholera, abundant in Virginia, Michigan, Maine and Texas. In Virginia the loss is estimated at \$10,000 in four months.

*1, Dr. P. Z. Colsson. 2, S. Stevens, S. Bock and G. C. Faville. 3, F. E. Rice and Th. Bland. 4, G. S. Agersborg. 5, W. B. Rowland. 6, M. H. McKil-
lip, J. Albright, J. B. Galt, J. J. Vanderzee and M. R. Trumbower. 7, B. E.
Stauffer, C. H. Gollatz, J. N. Navin and A. D. Galbraith. 8, C. H. Flynn, J.
Henry, W. P. Robins and M. Stalker. 9, A. A. Holcombe and A. W. Hoover.
10, G. H. Bailey. 11, W. Dougherty and T. W. Sprauklein. 12, W. Bryden,
W. H. Haskell, T. S. Very, E. F. Thayer and L. H. Howard. 13, J. Sutton.
14, H. F. James and T. E. White. 15, L. T. Hazen. 16, W. G. Schmidt, W.
H. Arrowsmith, J. Gerth, Jr., J. C. Corlies, E. L. Loblein and J. C. Force.

17, H. W. Bath, J. Faust, S. S. Field, W. H. Pendry, Richard Kay, C. Burden, J. Hollingsworth, H. B. Boyd, W. C. Bretherton, J. J. Baker, J. S. Sutchiffe, W. S. Devoe, L. W. Terwilliger, H. T. Foote, W. Cutting and J. Lindsay. 18, J. C. Myers, Jr., J. H. St. Clair, W. R. Howe, L. P. Chase, L. D. Blanchard and J. N. Krowl. 19, W. H. Knight, D. M. Kain, C. T. Goentner, D. K. Light, W. H. Hoskins and W. H. Ridge. 20, J. O. Tillinghast. 21, F. J. Smith. 22, J. W. Wood, H. S. Hogsett, C. B. Robinson and J. A. Myers. 23, A. Valerius. 24, J. D. Hopkins.

(From the July Bulletin of the Department of Agriculture, Statistics and Health, Manitoba, Canada.)

“Live stock appear to be almost free from disease. With the exception of glanders among horses, which unhappily prevails in a few isolated cases, nothing has been reported. During the winter cattle were troubled in a few places with a swelling on the jaws, but that all passed away with opening of spring and nothing has been reported at this writing as ailing them. A number of farmers lost their sows and litters, the cause being attributed to overfeeding before pigging. There being large quantities of wheat of an inferior quality on hand in many places it was largely used as feed and instead of feeding sparingly the reverse appears to have been the case, and the many deaths which occurred among hogs was the result. The country possesses many young and inexperienced farmers who will have to make their calling a study in every respect if they expect to get on and prosper.

“The operations of the Veterinary Sanitary Service of the Department during June were confined to horses, no cases of infectious or contagious disease among any other animals having been reported to district veterinarians. During the month district veterinarians paid thirty-five visits of inspection, nineteen being first visits and sixteen periodical. The time occupied in these inspections was thirty days, 1023 miles being travelled, 854 by road and 169 by rail. The number of horses inspected during first visits was thirty-eight. Fifteen horses were condemned as affected with glanders or farcy and were destroyed; twelve were quarantined on suspicion of being affected with glanders or farcy. No cases of mange were reported. Of the fifteen cases of glanders or farcy destroyed Brandon, Lisgar and Selkirk counties had three each; D'Iberville two, and Manchester, Portage la Prairie, Souris River and Dufferin one each.

REVIEW.

MEDICAL REGISTER OF NEW YORK, NEW JERSEY
AND CONNECTICUT.

By W. T. WHITE, M.D.

The present volume, the twenty-second of the publication, has been recently delivered to its ordinary subscribers, well printed and handsomely brought out, as might be anticipated when we remember that the house of G. P. Putman's Sons are responsible for the publication. It contains whatever information may be desirable respecting the medical profession in the States of New York, New Jersey and Connecticut, and, to that extent, is probably as complete a work as we have a right to look for. The veterinarians of this section of the country have heretofore freely referred to its pages and largely taken advantage of its labors as a directory to members of their own profession, or in matters properly falling in their way. This has been the case because for a number of years the interests of veterinary colleges in active operation, and even those which were not, and of veterinary hospitals, whether full of patients or of empty stalls, together with veterinary operations, have all usually found place and mention in the *Register*. This year, however, veterinarians in search of items of interest will be disappointed if they look for a continued "register," such as they have become accustomed to, and the *alumni* of the organized schools who watch for news from their *alma mater* will search in vain, in the small space appropriated to veterinary intelligence in the little green book.

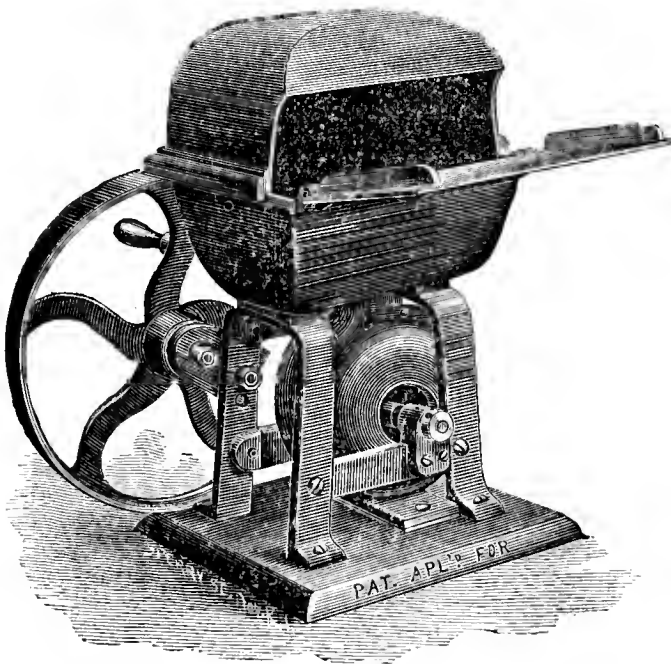
That the Columbia Veterinary College had closed its doors, as long ago as in March last, every one knew, and no reports could be expected from that institution. But has any rumor found tongue that the American Veterinary College was about collapsing? Has any one heard that it was going to stop work and go into *articulo mortis*? On the contrary, were there not abundant rumors in circulation of successful progress hitherto, and large promise for the future—that it had outgrown its habitation, and it had become necessary to provide, and had taken steps to secure, larger accommodations for the students? And yet, no mention of that institution is found in the *Medical Register*, notwith-

standing the fact that since the opening of the college in 1875, a period of nine years, it has always occupied the place in its columns allowed to it, as due to one of the medical schools of the State of New York.

According to the *Medical Register* the only veterinary college existing the present year, in this State, is the New York College of Veterinary Surgeons. Is it because the editor of the *Register* is also the president and professor in that institution, that it is the only one thought worthy of hospitality in the pages of the *Register*? Leaving the answer of this query to the judgment of our readers, we take pleasure in now announcing that a veterinary register is now in process of publication and that in a short time veterinarians will no longer be obliged to depend on deficient and biased directories for information concerning that profession.

NEW INSTRUMENTS.

THE HANDY LITTLE FORGE invented by Dr. C. H. Peabody, of Providence, R. I., is already known to some of us, having



been exhibited by its inventor in New York and Boston at meetings of the United States Veterinary Medical Association. Since, however, it has been considerably improved, and to-day is offered to the profession at a very low figure. It is most convenient, and must find its way into every veterinarian's arsenal. It is small, neat, sufficiently

powerful to heat several irons in a few minutes, can be carried easily, and, at the price fixed, is at the disposal of every one. Full particulars can be obtained by applying to the inventor.

NEWS AND SUNDRIES.

TEXAS FEVER.—Texas fever has made its appearance again in several of the Northern States.

KILLED BY FLIES.—Three deaths of a remarkable character recently occurred near St. Petersburg. They were caused by blood-poisoning induced by the stings of flies which had been in contact with cattle infected with the rinderpest.

RABIES IN BIRDS.—M. L. Gibier has succeeded in inoculating hens with the virus of hydrophobia and then reinoculating rats with cerebral matter taken from these diseased birds. The rats so treated presented all the characteristic symptoms of rabies; microscopic examination of the brains of the inoculated hens showed the presence of the specific micrococcus.—*Centralblatt für Chirurgie*, June 7, 1884.

ACTINOMYCOSIS CONTRACTED FROM EATING MEAT.—The surgeons at the Chicago county hospital have under treatment a Mrs. Murphy, 27 years of age, who is suffering from a horrible disease which afflicts cattle, and is known as “lumpy jaw.” It is in the form of an abscess on her jaw, and was at first supposed to be an ordinary abscess, but microscopical examination proves the contrary. The abscess was found to contain vegetable parasites identical with those found in abscesses on cattle. It is supposed to have been caused by eating the meat of cattle having the disease. An operation will be performed on Tuesday next. The case excites some interest, as it is the first one reported in the United States, though similar cases have already been recorded in Germany.—*N. Y. Sun*.

AN OLD MODE OF DETECTING RABIES.—To enable a person who had been bitten by a dog to ascertain whether or not the animal was rabid, the *Universal Magazine*, a London monthly publication, in its issue of November, 1753, published the following, which is accredited to “The Memoirs of the Royal Academy of Sciences at Paris:” “When a person hath been bitten by a

dog that is apprehended to be mad, it commonly happens that the dog is killed before one is assured of his condition, and the person bitten continues in a cruel uncertainty. Mr. Petit, the surgeon, hath an expedient for putting an end to this uneasiness. He rubs the throat, the teeth, and the gums of the dead dog with a piece of meat that hath been dressed, taking care that there be no blood to stain it, and then offers it to a living dog. If he refuses it with crying and howling, the dead dog was certainly mad; but if the victuals have been well received and eaten, there is nothing to fear."

NEW HORSESHOE.—A new horseshoe has lately been experimented with at Lyons, France. It is made entirely of sheep's horn, and is found particularly adapted to horses employed in towns and known not to have a steady foot on the pavement. The results of the experiments have proved very satisfactory, as horses thus shod have been driven at a rapid pace on the pavement without slipping. Besides this advantage, the new shoe is very durable, and, though a little more expensive than the old one, seems destined sooner or later to replace the iron shoe, particularly for horses employed in large cities where, besides the pavement, the streets are intersected by tramway rails, which from their slipperiness constitute a source of permanent danger.—*Am. Druggist.*

AMERICAN VETERINARY REVIEW,

OCTOBER, 1884.

ORIGINAL ARTICLES.

REPORT ON THE RECENT CATTLE DISEASE IN KANSAS.

BY PROF. JAMES LAW, of Cornell University.

(Continued from page 258.)

ERGOT AND ERGOTISM.

In view of the importance of this question, it seems desirable to append a general statement on the subject of ergot and allied fungi, and their known effects on the animal system.

Ancient synonyms.—Ignis Sacer; Ignis Sancti Antonii; Ignis Sancti Martialis; Ignis Invisibilis seu Infernalis, Beatae Virginis.

Modern synonyms.—Morbus Cerealis; Mutterkornbrand; Kriebelkrankheit.

Definition.—These names are given to an affection, or rather several affections, caused by the consumption of cereal grains affected with ergot (sclerotium or spawn of *Claviceps purpurea*). The morbid phenomena produced in those that eat this product are of several different types, according to the conditions in which the ergot has been grown and the conditions of life of the animals fed. The most prominent forms may be thus stated;

1st. The nervous form, resulting in convulsion, paralysis, or lethargy.

2d. The gangrenous form, resulting in the dry gangrene of the extremities.

3d. The abdominal form, resulting in constipation, impactions of stomach or bowels, with subsequent diarrhea and eruptions on or erosions of the mucous membranes or skin (mad itch).

4th. The abortion form.

HISTORICAL SKETCH OF ERGOTISM.

The disastrous abortions which occurred in nearly all classes of pregnant females, human and brute, at Rome in B. C. 278 (Orosii), are with some reason attributed to ergotism, as agriculture was likely to have been neglected in consequence of the prevailing Tarentian war. In later times the affection has been noticed to follow a dull, cloudy summer and a great development of ergot. In A. D. 857 it was widespread among human beings (cattle not mentioned; Amsales Zanteus, Pertz). Man and beast suffered severely in France in A. D. 994 (Heusinger); man in Flanders in A. D. 1041 (Chron. Ste. Bavonis); in England in 1048 (Tysden); in France (man and beast) in 1085 (Königshofen), in which year there were great losses in cattle in England and Ireland (Chron. Sax.); in man and beast on the continent of Europe in 1089-'91 (Chron. Ste. Bavonis); in France in 1099 (Mylius); in France in 1127 (*ibid.*); in France and England in 1196 (Heusinger); in Spain and France (dry gangrene in men, sterility in cattle, sheep, and birds) in 1213 (Villalba), 1214 and 1215 (Heusinger); in Germany (ergotism in man) in 1598, also a great mortality in beasts, cause not stated (Aeuspinger); in Silesia in 1587 and 1592, and in Westphalia and Hesse in 1596 (Hecker); in France in 1650; in Germany (in men, ruminants, horses, swine, geese) in 1694 (Brumer) and 1700-'1 (Hoyerus); in Freiburg in 1703 (Kanold); in Sologne in 1709 (Phil. Trans.); in Transylvania (pregnant animals aborted) in 1720 (Koliser); in Silesia (men and animals—cows and ewes had difficult and dangerous parturitions) in 1721 (Hecker, Bresl. Samml.); in Silesia and Bohemia (convulsive form) in 1737 (Soring); in Sologne (man and beast) in 1754 (Verheyen); in France and Germany (fowls had spasms and laid few eggs, most of which failed to hatch) in 1770-'72 (Hermann, Schneider, Meyer, Traube).

Since the end of the eighteenth century ergotism has become in-

creasingly rare in the Old World, the general improvement of the soil by intelligent culture having restricted the development of ergot, and the extensive production of potatoes, turnips, beets, and other succulent roots and vegetables, having done much to limit its evil effects when it does exist. The abortions and difficult parturitions in Nassau and Central Europe in 1829, in connection with the damp, cloudy season and spoiled forage, were probably in part due to ergot (Franque, Zundel).

Ergotism prevailed in man and pigs in Saxony and Northern Europe in 1831-'32, in connection with an unusual development of ergot in rye, and dogs and cats compelled to eat of the rye went mad—nervous ergotism? (Wagner, Helm, Verbeyen).

Abortions and retention of the placenta were also prevalent among cattle (Helm). An extensive outbreak occurred in Southern France in 1835 (Barrier); also in Hesse (Heusinger). An epizootic of ergotism at Trois Crois, France, in 1841, was traced to the ergoted state of the rye and other gramineæ in the district (Edinb. Month. Jour., Jan., 1842).

In 1842 the dry gangrene of the limbs of cattle in Central New York was successfully traced to the presence of ergot in the hay (Randall), and my observations in 1868 in New York and Ontario fully confirmed this conclusion. Since that time the reports of the Commissioner of Agriculture have furnished frequent accounts of such outbreaks in different States, though the true source of the trouble has not always been recognized.

Professor Tanner, writing in 1859, traced the abortions in cows in the wet meadow lands in Western England to the prevalence of ergot in the grasses, and without doubt many of the abortions occurring in the United States are due to a similar cause.

Smut—Closely allied to ergot in its effects is the smut of Indian corn (*Ustilago Maidis*). Roulin writes of this that in Colombia, South America, persons who eat it lose their hair and teeth, swine shed their bristles and become weak and atrophied in their hind limbs, mules lose their hair and hoofs, and hens lay eggs without shells. Tschudi says the ergot of maize is commonly used at Lima in place of ergot of rye, and another writer mentions an almost universal occurrence of abortion in cows in Brazil from eating this

product. Tode, Sarcone, Cordier, Imhof, Parmentier, and Tessier have fed smut to men, dogs, and birds for periods varying from several days to several weeks without evil effect. Gerlach, on the other hand, fed geese and ducks on smut of wheat, thereby inducing death (of anthrax?). In 1842-'44 he observed a gangrenous fever (and true anthrax?) in horses from feeding on smutty wheat. Soon after being put on the wheat they were attacked with indigestion, the fæces were covered with a layer of mucus, they had colics daily, and on the slightest occasion (chill or violent exercise) they developed a typhous and gangrenous fever (and true anthrax?) so that in one day two or three animals sickened and died. He gives another instance of the occurrence of abortion in cows from the same cause. (Magaz. f. Thierh.) Monati records that the *peca pellagra* of the Italians was unknown until the eighteenth century, when maize began to be extensively cultivated. Mazzari, Mardi and Lette attribute this disease entirely to smutty corn. Balardini found that fowls and dogs suffered when fed on smut, and confirms the assertion of Vallezosca della Fallcadina that pellagra was banished from the Bellano Alps by the introduction of the potato as the basis of the food of the poor.

In 1870 the dairy cows of Cornell University were attacked with unhealthy gangrenous sores around the coronets, after they had been fed some time on corn stalks containing many "nubbins" affected with smut, but speedily recovered when in accordance with my advice the objectionable food was withheld. In 1868 Prof. John Gamgee fed to each of two cows 21 pounds of smut from corn in the course of three weeks, producing no active disease, but the one animal to which the food was given dry steadily fell off in condition, while the one to which it was fed in a moist state steadily gained. The instance of gangrene quoted above as occurring in the present season in Yates County, New York, is a more recent manifestation of this deleterious action of smut.

To these may be added the many cases of dry murrain which occur yearly in cattle that have been turned out in fields of corn stalks when the usual sources of water supply have been sealed up, and when drink can only be had irregularly through breaking of ice or prolonged hand pumping. There is further reason to sup-

pose that many cases of so called *mad itch* in cattle are but instances of a gastric and cutaneous disorder due to the ingestion of ergot or smut.

It should here be noted that a number of maladies usually classed with anthrax, but really caused by molds and other fungi, bear a close resemblance in many respects to the disorders caused by ergot or smut.

SYMPTOMS OF NERVOUS ERGOTISM.

This has been more commonly observed in the north of Europe, while the gangrenous form has prevailed farther south. In explanation Heusinger suggests that the greater abundance of ergot acknowledged to exist in Southern Europe, and notably in Sologne, determines a more rapid poisoning and a different class of symptoms. To a certain extent this is negatived by the experiments of Wright, who found convulsions, local spasms, and paralysis associated with intestinal disorder as the result of the administration of large doses of ergot, but in no case anything approaching gangrene. In the worst cases in Kansas, too (Bead's ox, which died in twenty-four hours, and Keith's calf, which died in two days), the lesions were not those of dry gangrene, but of inflammation of the alimentary mucous membrane. The explanation is probably to be found rather in the conditions under which the ergot has been grown and the stage at which it had been harvested.

The nervous form of ergotism is usually ushered in by some loss of nervous power, accompanied or not by digestive disturbance. There is at first vertigo and unsteady gait, with a marked disposition to lie down and remain so until urged to get up. The hair or feathers lose their luster and the skin its heat. The senses of touch, sight and hearing vary, being dull and obtuse at first and afterward morbidly and even painfully acute, though with these periods of hyperæsthesia intervals of torpor and obtuseness may still alternate. During these periods the pupils are dilated. Constipation is an early symptom, usually followed by an irritable diarrhea, the fæces being covered by mucus or mixed with it, or even with blood. The digestive disorder is further indicated by nausea (vomiting in swine and carnivora), congestive spasms or

paralysis of the throat, sores on the mucous membrane of the mouth and throat, and salivation. In some cases there is merely progressive paralysis, with little or no spasmodic action, the palsy commencing in hind limbs and gradually extending to the rest of the body. This constitutes the paralytic form.

In other cases the spasms set in early. They may resemble those of tetanus or epilepsy, and often cause the subject to moan or cry out with pain. They are not continuous but paroxysmal, the intervals being marked by knuckling forward at the fetlocks from some remaining tonic contraction of the flexor muscles, or by stupor, drowsiness, or even palsy of the hind limbs.

The course of the disease will vary with the individual susceptibility, the quantity of ergot taken and its quality. It sometimes only attains the first stage of drowsiness and vacillating gait, and on the ergot being withdrawn recovery ensues. In the more severe cases death takes place after several hours or days, preceded by comatism or general paralysis.

More commonly the quantity of ergot taken is small but maintained, and the disease goes on in a chronic form. The appetite is irregular, dainty and ravenous by turns; but however much is taken, the animal fails to digest and assimilate it and becomes steadily emaciated and exhausted, and finally dies in a convulsion.

Finally, in a certain number of cases, neither spasms or paralysis occur, but the animal is plunged into a condition of profound lethargy and stupor, from which nothing will rouse it; it remains mostly in the recumbent position, eats little, fails to digest or assimilate, becomes rapidly emaciated, and dies in marasmus.

SYMPTOMS OF GANGRENOUS ERGOTISM.

Dry gangrene.—Cases of this kind are usually preceded by intestinal and nervous disturbance. Constipation, diarrhea, variable appetite, salivation, and dullness, followed by a morbid acuteness of the senses, may be so marked as to attract general attention, or these symptoms may be so slight that the gangrene seems to come on as a primary lesion. In the lower animals the gangrene usually attacks the feet and pasterns, and less frequently the tail, the ears, and even the horns. It is ushered in by lameness,

with heat, doughy swelling, and extreme tenderness of the affected extremities. The heat is soon reduced below the natural standard, or followed by absolute coldness, sensibility is lost, the part takes on a deep brownish-red or black appearance, dries or withers up into a hard horny-like mass, and is slowly separated from the living parts. Sometimes the death of the tissue and subsequent sloughing is limited to circumscribed spots or patches above the hoof, but more commonly it involves at once the whole substance of the member (skin, sinews, and bones) up to the top of the hoof, to a given height on the pastern, or to some point on the shank bone. The limit of the dead part may be easily recognized by the abrupt edge of the cold, hard, dried-up and insensible skin as contrasted with the hot, puffy, swollen tissues above. This limit is soon further marked by a breach of continuity or crack between the living and dead, forming a ring completely encircling the limb and extending in succession through the skin, sinews, and bone. All below this line is dark-brown or purplish-black, hard, dry, horny, insensible to wounds, and will not bleed when incised. Above this line are the healthy pink granulations, separating the dead from the living and building up a covering over the stump. The process of separation is rapid in the case of the soft tissues (skins, tendons, nerves, vessels), but may require months for its completion through the center of the shank-bone, and as the animal is thrown into a state of great vital prostration and emaciation, to say nothing of poisoning from the absorption of septic products, it is soon reduced to a very miserable condition. This fact has given rise to many ignorant and unfounded charges of starvation of the animals in the recent outbreak. When the gangrene extends up to the level of a joint (upper or lower pastern or fetlock), the separation through the comparatively soft ligaments of the joints is speedily effected, and the constitution suffers much less than when the separation has to be effected through the middle of the shank-bone.

In favorable cases, after the removal of the dead mass, the stump heals over by the gradual contraction of the skin over its end and the formation of a firm cicatrix, and the animal makes a shift to live, and even at times to fatten.

In the slightest cases and while the hoof is not shed, but merely detached over a portion of the sole, the toe turns up, grows out excessively, and the beast walks on the dew-claws.

In the worst cases, with extensive sloughing, the irritation of the sores by filth, and the absorption of putrid products, the animal suffers from a very high fever, with dry mouth, red eyes, dry muzzle, excited pulse and breathing, high temperature, suppressed secretions, and foetid breath, and dies from septic poisoning.

One symptom, the presence of sores and even vesicles in the mouth, has been a cause of much misapprehension in the recent outbreak in the West. Observers had overlooked the fact that one of the most constant symptoms of ergotism in all its forms is disorder of the digestive organs, and with this disordered innervation and even an eruption in the mouth and on the skin. Hence the owners and even some veterinarians, misled by the great numbers attacked, the simultaneous implication of the mouth and feet, and the appearance, in one or two instances, of distinct blisters, pronounced this the *foot-and-mouth disease*. This has been shown above to be incorrect, and it is only brought up here to show that blisters on the mouth or elsewhere must be recognized as an occasional symptom of ergotism.

All medical writers on the subject attach a high importance to the sense of formication (feeling as if ants were creeping over the skin). Bruce says that gangrenous ergotism differs from ordinary gangrene only in its cause (Dict. of Med.), and phlyctenæ or blisters, with colored contents, is an almost constant symptom of gangrene; Buck, under gangrenous ergotism, says there are "blebs with ichorous contents which soon discharge and leave a gangrenous spot of varying size, when dry gangrene is developed" (Hygiene); Tabourin notices that in animals there often occurs a sero-mucous discharge from the nostrils (Matière Médicale), and Zundel says that this discharge is at times sanguinolent (Dict. de Méd. et de Chirurg. Vét.).

These quotations tend to show the liability of the mucous membranes and skin to suffer in such cases. This liability to the formation of sores and blisters on the mucous membrane and skin in ergotism satisfactorily explains the reports made in former

years, that *foot-and-mouth disease* existed in certain localities in the West. Results always disproved such allegations, for the disease in question never entered our western stock-yards, nor spread over our Middle and Eastern States, as it must inevitably have done had it been the *foot-and-mouth disease* which prevailed at the source of our cattle traffic. As all such reports that have come under my notice referred to the period of winter, when the animals were confined to an aliment of dry hay or cornstalks, and as cattle only were mentioned as having suffered, it is almost certain that the trouble then, as now, was but the result of ergoted or smutty fodder. That the observers in all such instances should have mistaken the ergotism for the contagious plague is not surprising, because of a certain similarity of symptoms, by the emphasizing of which the account of the dietetic disease could be made to read exactly like that of the contagious one, as witnessed in the letters and newspaper reports quoted in the earlier part of this paper. The mistake is the more easily explained that no work on the practice of veterinary medicine in the English language, with the single exception of my "Farmer's Veterinary Adviser," treats of *ergotism*. In England the disease is unknown, and American veterinary books are mostly republications of English ones.

In Tessier's experiments on pigs, the first effects were redness of the eyes and ears; the latter organs and the limbs then grew cold, the joints swelled, gangrene attacked the ears, limbs, and tail, and the animal died in convulsions. One of them, six months old, lived for sixty-six days. Its intestines were described as inflamed and gangrenous. (Mém. de la Soc. de Méd.) Here, in another class of animals, is shown the same tendency to disorders in the skin and alimentary mucous membrane.

In Millet's observations on gallinacæ the comb became cold, purple, black, withered, and dried, the beak and sometimes the feet shriveled up and died, and gangrenous patches covered the walls of the abdomen. Tessier noticed that in palmipeds the bill and tip of the tongue withered up, and Decoste that the web between the toes blackened, dried up, hardened, and together with the toes, dropped off. This tendency to implicate the bill and

tongue is generally recognized (Delwart, Read, Thuillier, Salerno), and coincides with the observed symptoms in our cattle.

In concluding this part of the subject it should be stated that powdered ergot applied upon raw surfaces in the lower animals has led to circumscribed patches of gangrene. In estimating the causes of gangrene in the limbs, therefore, and of unhealthy sores in the mouth, throat and bowels, we should not overlook this local action of the ergot, which is applied to the feet in wet or thawing weather in the mud beneath the racks, and to the mouth and alimentary canal continually in the masticated food.

SYMPTOMS OF DIGESTIVE DISORDERS IN ERGOTISM.

Indications of digestive disorder are usually among the earliest symptoms of ergotism. Carnivora and omnivora usually reject by vomiting any considerable dose of ergot administered, and show such a disgust for the drug that they will often rather starve than voluntarily partake of any food containing it. In the herbivora constipation and subsequent diarrhea, as we have already seen, is a very common early symptom in both the nervous and gangrenous types of the disease. We have even seen that an eruption on the skin and on the mouth and other mucous membranes is a not unfrequent concomitant of the digestive disorder. But in some outbreaks the disorder of the digestive organs is such a prominent feature that the subsequent implication of the nervous system is liable to be looked upon as only contingent on the digestive disorder. These are the so-called cases of *dry murrain*, in which cattle fed on ergoted hay or smutty maize, and subjected to a dearth of water during frost, have the stomachs thrown into a state of torpor, and the manichs firmly impacted with dry food. The local irritation usually leads to diarrhea, and in bad cases to inflammation of the stomach and bowels, but sooner or later the brain usually sympathizes in the trouble, and spasms, delirium, and even paralysis ensue. There is first dullness, drowsiness, inappetence, and a tendency to lie with the head in the flank, and the pupils dilated; then there may be colicky pains, with looking at the flanks, uneasy movements of the hind feet and tail, then redness of the eyes, a staring

look and blindness, then involuntary or unconscious movements, bellowing, a tendency to rush forward irrespective of obstacles or dangers, and an early death by accident or in convulsions or paralysis. This will be recognized as strongly resembling what was known to the old farriers as *stomach staggers*, which occurs so often from the consumption of moldy or musty hay or oats, of the *Lolum temulentum* of *Lathyrus cicera*, of partially ripened rye-grass, millet, or vetches, or finally of lead in some form. In all these cases alike there is this in common, that a poison which acts primarily on the digestive organs afterwards operates directly on the brain, which it reaches through the course of the circulation.

To a horse Hertwig gave 3,552 grams of ergot of rye in twenty-four days, causing *colics* and *inappetence*, which passed off in a few hours, drowsiness, which also quickly passed, dilatation of the pupils, slight contractions of the cutaneous muscle, lowering of the temperature of the skin, and reduction of the heart's beats from 40 to 28 pulsations per minute. The day succeeding that on which the last dose was given witnessed the disappearance of all morbid symptoms. Even in experimental cases, then, and in solipeds, there are developed gastric disorders allied to those occurring in *dry murrain*.

ABORTION FORM OF ERGOTISM.

In the historical sketch given above are recorded a number of instances of widespread abortion which had been traced to ergot or smut. It would be disingenuous to overlook the fact that this action of ergot on the lower animals has been held to be disproved. Dr. Wright experimented with large doses of ergot on pregnant bitches, cats and rabbits. If the doses were moderate, the animals remained apparently healthy, carried their young to full term, and brought them forth alive. If larger doses were given, the symptoms were dilated pupils, rapid pulse, convulsions, flaccidity of the limbs, followed by tetanic rigidity which continued till death, *but no abortion*. (Ed. Med. and Surg. Jour.) In other cases similar results were obtained. But this no more disproves the action of ergot on the uterus than the absence of all nervous symptoms in certain cases proves that this agent can

never act on the brain, or the lack of dry gangrene in others proves that it can never act on the capillaries of the extremities. Similar objections were for a time advanced against its action on the uterus in the human female, but such objections are now definitely set at rest. In many cases the comparative inactivity of the agent was due to the period of harvesting, and in others to the loss of power through exposure, while in still other instances the susceptibility of the animal and the conditions of its life doubtless stood in the way of a positive result.

Dr. Kluge found that ergot secured before the grains had fully ripened was the most effective (Taylor, Med. Jurisp.) It is undoubtedly more active in certain years (grown in certain conditions) than in others. The ergot of wheat has been found more active than that of rye (McGugin, Iowa Med. Jour.). Ergot long exposed to the air, and especially in the condition of powder, rapidly loses its medicinal and toxic properties. Again, the uterus is subject to periodic excitement corresponding to the periods of *heat* in the impregnated female, and as normal parturition usually takes place at one of such periods, so it is probable that ergot administered at such a time would be more efficient than during the interval. Levi finds that nervous ergotism results from the vegetable principles (ergotine, ecbo-line, &c.) and abortion from the phosphoric acid. A lack of this acid would thus mean inability to cause abortion (Lo Sperimentale).

It is unhappily too true that disastrous abortions are often coincident with feeding on ergot or smut, and the recent abortions of mares fed on ergoted red-top in Central Illinois is only one of a thousand such instances. Among recent remarkable instances is a widespread abortion which occurred in New Zealand in 1875 in consequence of the introduction to the colony of rye grass which ran largely to ergot (Vet. Jour.). Experimentally, in the hands of Diez, ergot produced abortion in pregnant bitches and Guinea pigs; in those of Percy and Laurent, in a cow. Zundel sums up his experience by saying :

A very constant symptom of ergotism is abortion in the females, and it is upon this specific effect that the therapeutic use of ergot is based; but abortion is observed as well after the long-continued prehension of aliments altered by smut

(Fuchs), of wheat affected by brown rust (Gerlach), and of straw covered with rust (Haselbach). This is noticed not only on mammals, but on gallinaceæ. (Dict. de Méd. et de Chirurgie Vétérinaire.)

The symptoms of abortion from ergotism do not differ from those of abortion from other causes. If none of the nervous, dyspeptic, or gangrenous phenomena are shown, there is merely a temporary uneasiness, the usual preliminary symptoms of parturition, and the expulsion of the fœtus and its envelopes. Oftentimes this is found to have occurred during the night, or it takes place in the field, and is only suspected when the animal comes in *heat*.

(To be continued.)

A SUGGESTION CONCERNING THE OPERATION OF NEUROTOMY ON TROTTING HORSES.

BY T. S. VERY, V.S.

(A Paper read before the United States Veterinary Medical Association at the meeting held in Cincinnati, Sept. 16th, 1884.)

The operation of neurotomy has had many advocates and many opponents. Under some circumstances, particularly where relief from painful lameness is otherwise not to be obtained, it may be considered a humane and practical method of treatment. Other circumstances render it objectionable, even in incurable lamenesses. The conscientious practitioner will hesitate and investigate closely before deciding to operate in any case. Hap-hazard undertakings of this kind will lead to queer results, and to some very unwelcome and entirely unanticipated.

There are some few operations of a harmless nature, like filing the molar teeth, which one might feel justified to undertake at the solicitation of an owner. I maintain, on the other hand, that it is unprofessional and vicious, as well as "un-American," to cut off the tail of a horse to conform to a foolish fashion, even at the request of a wealthy and influential patron.

The operation of neurotomy certainly ought never be performed except the judgment and conscience of the operator justifies it, and no respectable man would practice it for dealers in horses simply to make the animals more merchantable.

It is a notorious fact that in former years the operation has been injudiciously performed by traveling "horse-doctors who made the operation a specialty." Horses were thus deprived of sensibility in their feet without good and sufficient cause, but simply for a dollars and cents consideration between practitioner and owner.

If the chances of destroying the animal have been explained to the owner, which in some cases is doubtful, the owner has taken these chances in order to effect a quick recovery from lameness, considering the matter, as they are frequently prone to do, simply in its commercial aspect. The operator has done a mean and despicable thing for a paltry reward, and either ignorantly or indifferently injured his own reputation—if he has had any; has brought discredit upon an operation the benefit of which is acknowledged in many cases, and upon a profession the members of which are, as a body, the equal of any in point of humanity and respectability.

It is not necessary to enter into any details concerning the advisability of operating or refusing to operate in certain stages of disease, or in the different conditions and conformations of the feet. The importance of deciding which are and which are not proper subjects is well understood, but much good judgment can be used, or grave mistakes made by the operator in arriving at conclusions, in making a thorough analytical diagnosis, and in his conception of pathological conditions as influencing results.

The matter to which I desire to call attention is one quite as important as any of these, but I believe nothing has heretofore been written or said professionally about it. I have never heard it discussed or alluded to, and but for an experience that called my attention to it, probably I should not have this opportunity. It relates to the effect of the operation upon the gait of the fast trotting horse.

Among some horsemen the opinion prevails that an animal trots faster after having been successfully neurotomized, and it is easy to discover other conditions favoring why he should go freer and faster, with quickened step and increased stride.

But there are cases in which, instead of improving the fast

gait, it destroys and makes it impossible, and subsequent to the operation the animal is worthless as a trotter until reunion of the nerves has taken place and sensibility has been restored to the feet. In such cases the action of the limbs is so altered that the animal, by hitting his legs and feet in some manner, is forced to falter, and "breaks," ambles and "mixes his gait" in a way which will prove anything but encouraging and agreeable to the driver.

One shudders to think of the abuse which some trotting horses receive. In the hands of intemperate and ignorant drivers their lot is indeed a hard one. Thrice blessed is the half-fed, slow working horse in comparison. A "trotter" is traded and sold much oftener than a slow horse, and as long as he improves in speed he usually receives good care and kind treatment. When he begins to deteriorate he becomes a victim of circumstances, and is ill-used forever after.

These remarks apply to the clean-gaited, smooth-going horse, which may be said to be gifted; but heaven help those poor wretches which, by imperfection in gait and conformation, or because of other imperfections, are able to trot fast only under favorable conditions, which in their cases do not always exist.

It would be particularly inhuman and unwise to operate upon a "trotter" and place him in such a condition that by altering his gait he is rendered liable to overreach and become confused in action, so that in being passed from one owner to another, each one perhaps endeavoring to make him trot and losing patience in the attempt, he would be whipped, twitched, pulled and abused immoderately. It might be considered safe and humane to refuse to operate at all on an animal required for fast work. It would certainly be so in cases where it was deemed possible that the benefit resulting from the operation would be more than offset by creating a new source of evil and hardship for the unfortunate beast.

My attention was drawn to the consideration of this matter through owning a horse which I prized very highly apart from his money value, and which becoming, as it was supposed, incurably lame, was neurotomized. He was one of the fastest of road

horses; one of the steadiest, purest-gaited and most pleasant drivers possible. He could strike a 2:30 gait, in going a hundred yards, from a walk, and could be relied on not to break or act foolishly under any circumstances. He never interfered or cut, or hit his legs anywhere or at any time. He had been a little lame at times, and finally became incurable by ordinary means. Consulting two of my friends about it, it was thought best to operate upon him. One of these gentlemen kindly performed the operation, which terminated in a favorable way so far as immediate results were concerned, and he was put to work and went sound. But from that time he could never go a three-minute gait. When urged to go fast he would "hitch" and break, the hind shoes would clatter against the front ones; he would amble and pace, and go all sorts of ways rather than trot. He was willing to try, but the effort was futile. Now I had had quite an experience with "trotters," and had owned and driven a good many (but have now outgrown the fever), so I could generally find out where and how and why they hit their legs and broke or acted badly. I owned more than a bushel of boots, toe-weights, rollers, check-reins, bits, etc., and knew much about shoeing to balance the action and overcome defects in gait; but all the traps, and all the knowledge and ingenuity I possessed availed nothing in this case. His value as a "trotter" had disappeared. Accordingly I resolved not to try to trot him, and while he lived used him only for slow road-work, which he did acceptably.

Another case which came under my observation and handling was that of a mare that could trot half-miles in 1:10 almost any day. I had seen her do this a number of times, and go as steadily without boots or weights as could be desired. She became lame, and after various attempts to cure the lameness she was purchased by a friend of mine, who had her neurotomized, and subsequently lent her to me to drive double with a horse that I owned. I found that she acted almost precisely like the horse previously referred to; that she could not go at anything like her former rate of speed without overreaching and hitting her legs in some way that frightened her and made her act badly. I tried all my paraphernalia of boots, toe-weights and straps on her, but it was

no use; and so long as there was no sensibility in her feet she could not trot a bit. The following summer she became lame again through reunion of the ends of the nerves, and she could trot quite as fast as ever without boots or weights.

The similarity of these cases and the circumstances connected with them set me to thinking. I knew three or four horse-dealers who had had large experience with lame horses and with those that had been neurotomized, and made it a point to ask them some questions. All of them had seen cases similar to those that I have described, and one of them had arrived at the same conclusion I had in regard to them.

This opinion, which has been strengthened by other observations, was that it is unwise and unsafe to operate on any trotter that spreads his hind legs wide apart and carries the hind feet outside of the front ones in quick action. In both the cases related the tendency to this peculiarity was marked, and the flexion and extension of the hind limbs particularly bold. The effect of destroying the pain in the front feet either increased their action, or their time was disarranged in some way, producing a discordant movement in the relative stroke of the hind and front limbs, so that the contact between them came about in a way impossible to prevent by ordinary means, and rendered fast trotting impossible.

On the other hand, I should conclude that, other things being favorable, a horse that is "close-gaited," having less "lift and swing" to the hind feet and limbs, and carrying them straight under the body in rapid action, would go faster after the operation than he would if incurably lame in the front feet.

In the study of the action of the horse in fast trotting, wide latitude of thought and investigation may be exercised. I trust the suggestions I have made may do some good, not only in adding to an inadequate fund, but that they may lead to and develop others more important and of greater value.

Let us hope also that improvements in breeding, and in the management of the horse's foot, will in the future lessen the necessity for the operation of neurotomy, concerning the utility and humanity of which there will always be some doubt.

IMPACTION OF PELVIC FLEXURE OF COLON—RECOVERY.

BY W. D. CRITCHERSON, D.V.S.

On Monday, June 2d, I was called to see a bay gelding, between six and seven years of age.

History.—Had been owned by the present owner a little more than one year; was in fair condition, ate greedily, grain as well as the straw used for bedding; performed his work well, but was not able to increase his avoirdupois. On the day before (Sunday), for the first time, he had an attack of colic; owner treated with homœopathic doses of aconite and belladonna. Several hours after the attack he purged quite violently, the fœces having a very offensive odor. After this he seemed to be relieved, but still showed some abdominal irritation.

Monday morning.—He was still purging, and had intermittent pain. When I was called, found condition nearly normal. Diagnosed case as one of intestinal irritation, probably caused by over feeding on grass. Gave chloral hyd., 3 vi. in pill form, and ordered gruel, with small quantity of hay. Saw him again late in the afternoon; found slight rise in febrile condition; pain at times quite severe. Ordered a mixture of opium, belladonna and ginger, combined with an alcoholic stimulant in form of gin.

Tuesday June 3d.—Pain more violent, with expulsive efforts, and with little intermission. Had passed neither fœces or urine since early Monday morning. Suspecting impaction, made rectal examination, and found bladder partially filled with fluid, and lying well back in pelvic cavity, having been displaced by pelvic flexure of colon, which was firmly wedged in the inlet of pelvis. The mass was hard, and could not be displaced forward on account of violent expulsive efforts. Condition at this time: Temperature, 101°; pulse, 48; respiration, 120. Gave aloes Barb, ʒi, Ol. Lini, ʒx, and passed catheter. To allay pain, gave hypodermically gr. iv. of morphia. Throughout the day continued to give the anodyne mixture of opium and belladonna.

Wednesday.—Condition about the same. Hypodermic injections gave more relief than anything else. Continued the same treatment with the addition of rectal injections.

Thursday morning.—Rectal examination revealed no change, with the exception that the bladder was empty, the urine having been passed in small quantities when expulsive efforts were the most severe. Hot water injections brought away several small hard pellets of fœces, thickly coated with mucus. At noon had a severe attack of pain, which yielded to hypodermic injections. About five o'clock was very violent, but was soon brought under the influence of morphia. Fearing a rupture of the intestines would follow the administration of a second dose of aloes, I gave soda sulph. lb. i. and continued the use of soap injections per rectum. Ol. Terebinthinæ ℥ii. was added to the first injection, but was not repeated. Was more quiet during the night, the spasms being not so frequent or so violent. Temperature rose to 104° ; pulse, 80; respiration, 40.

Friday.—Temperature, 103° ; pulse, 84; respiration, 60. Intermittent pain. 4 o'clock P.M.—Temperature, $104\frac{4}{5}^{\circ}$ pulse, 90; respiration, 42. Combined a decoction of tobacco with rectal injection. Depended now wholly upon hypodermic injections of morphia to give relief from pain. In lying down, would go down first on the knees (like a cow), then would remain in that position several seconds before dropping gently down; when down, would extend the hind legs and press strongly against the side of the stall, while the near fore leg was kept constantly in motion, pawing the air. At seven o'clock the temperature had dropped to 103° and the pulse to 80. Was not in much pain, but seemed to be nauseated, and made several ineffectual attempts to vomit. Could not think that the effect was due to the tobacco, as it was retained but a short time. At five o'clock, temperature was $102\frac{1}{2}^{\circ}$; pulse, 78; respiration, 36.

Saturday morning.—On rectal examination, found impacted mass somewhat softer to the touch. Gave aloes ℥i. as injection. Being obliged to attend to other business, I left my patient quite comfortable. On returning a little after noon, I found the animal in terrible agony and the owner about to destroy him. It was impossible to control him, and as a consequence, he was severely bruised over his entire body, especially both hips. In ten minutes, under the effects of morphia, hypodermically, the

animal was apparently relieved of all pain, and remained so till 3:30 P. M., when he passed voluntarily a small amount of fœces. At this time temperature, 104° ; pulse, 90; respiration, 50.

Sunday, 7:30 A. M.—Temperature, $102\frac{2}{3}^{\circ}$; pulse, 90; respiration, 54. All through the day and night pain was controlled by morphia, instant relief being afforded. The effects of gr. iii doses lasted from two to three hours.

Monday morning.—A small amount of fœces was passed voluntarily, and with but little pain. During the day the animal defœcated eight times. The fœces were not liquid at all, but all that was in the rectum was passed “en masse,” it being dry, and composed of coarse woody fibrous substances, viz.: straw, coarse hay, etc. Before the fœces were passed in normal consistency, I am certain that the animal passed a bushel of this indigestible mass. All pain had now stopped. The food consisted of milk, gruel, hay tea, potatoes, carrots and a few cooked oats.

Wednesday.—His condition was normal. As there was considerable œdema of his breast, the result of numberless punctures with the hypodermic needle, I scarified it, and ordered it bathed with warm water; the injuries on different parts of the body were treated antiseptically, the hips and one knee being the only places that required stimulating by means of nitrate of silver. Fearing that abscesses would follow the repeated puncturing of the skin, (I had injected hypodermically nearly two drams of sulphate of morphia), I watched closely, but saw nothing more than the œdematous condition of the breast before alluded to, although the needle had been inserted into the pectoral muscles (the injections being made deep into the muscular structure) more than into any other part of the body. The punctures were not confined to that particular spot, being made into the neck, flank, thigh or breast, whichever part was most conveniently presented. Dreading the formation of abscesses as I did, I was very particular with my needle, and also with my solution, being careful to have it filtered, and a drop of carbolic acid added before filling the vial of my case. By so doing I am satisfied that the development of the vegetable parasite (penicillium) which grows at the expense of the alkaloid, was sufficiently arrested to prevent any deleterious

effects, provided the solution was used within a reasonable length of time. Bartholow, in his book on hypodermic medication, says: "That morphia relieves pain. That at first peristaltic movements are temporarily suspended, but continued use promotes, instead of diminishing peristalsis. That it is indicated in serous inflammation, as pleurisy before extensive effusion. Also in peritonitis chorea and eclampsia. In cases of fracture, overcoming as it does muscular contraction, it aids very much in reduction, a local injection having systemic effects." In regard to the development of the penicillium in the solution, he says: "That carbolic acid, alcohol, alum and acetic acid, unless in excess—thereby becoming irritant—are nil; that the mineral acids are effective, but are irritant; that the better way is to have the amount desired for a single injection put up in separate packages, and to make the solution of fresh water whenever it is desired."

For the first week after his relief, the animal lost flesh rapidly. At the end of six weeks he was returned to his work, and has performed it ever since, being in better condition to-day than he was before the attack.

QUEER PLACE FOR A FISH HOOK.

By W. B. ROWLAND, D.V.S.

In accordance with your wish I submit to the REVIEW the facts of a case that was unusually interesting to me.

On August 15th I was called into the country to see a black gelding, eleven years old, the property of Mr. M. About a week before he had punctured the near fore foot with a nail from a loose shoe; I opened the wound and found a sack of pus. The wound was treated with a carbolic lotion, and the lameness disappeared by the 21st, when I ordered him shod and put to work, which was done. After he had gone but one and one-half squares he began roaring, fell gasping for breath, and struggled for a full minute without breathing, with ropy saliva running from the opened mouth. I saw him twenty minutes after, in the following condition: blood running from the mouth and *right* nostril, sweating profusely and eating grass; he had been coughing and

had coughed up clots of blood the size of a tea saucer. On auscultating at the base of the neck I heard a loud sonorous rale, evidently blood.

Diagnosis.—Choking from some sharp foreign substance such as tin, which had ruptured the membranes during its upward passage, causing the hemorrhage.

Treatment—rest. On the 24th he was harnessed again but as soon as the bit was put in his mouth he began shaking his head. He had gone but a few steps when he fell and acted precisely the same as on the 21st. I was called in and saw him a few moments after in the same condition as he was after the first attack, with blood flowing quite freely. I used a speculum and passed my hand into the pharynx, but found nothing; I was puzzled, of course. After some time a diagnosis was made of spasms of the glottis, with a weakening of the walls of the blood vessels in that locality, probably the result of the punctured wound and reflex action. On the 27th I saw him harnessed and was on hand during this the third attack. He showed the same symptoms as were shown on the two previous occasions. He fell twice (once on me), and got up and commenced eating grass. While looking at him the attendant said: "Doctor, there is a string hanging out of his nose" I, thinking it was nothing but saliva, said: "Wash it off." He did so, but as he touched the nose with a sponge the horse fell over backward and got up. I looked at him, and there was the string, sure enough. It was fast at the other end, and as he was bleeding freely at the time, I had him cast and then passed my hand into the pharynx and detached a fish hook with three feet of string attached to it. I found the hook fastened on the *right* side of the glottis. I then used astringent lotions, but the next day I had to perform tracheotomy. Next week he will be put to work, as he is entirely well.

SUPERNUMERARY INCISORS.

By C. H. FLYNN, D.V.M.

There was brought to me to-day a six year old gelding, having nine well developed incisors on the lower jaw. The extra teeth were on the right side, anterior to the normal ones. They had

grown out so far as to interfere in closing the lips together, also in grazing.

The owner gave the following history of the case: two years ago he found the animal with a fracture in this region, these teeth dropping forward. After healing, three more teeth appeared, antagonizing perfectly with the superior incisors. I removed the teeth with forceps, and he immediately presented a much better appearance.

EDITORIAL.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The twenty-second anniversary meeting of this Association has been held, and from all reports has proved as successful as any the Association has ever had. The fears of its possible failure have proved erroneous, and the few who were present have returned to their various labors with the satisfaction of having had a good meeting, one in which important business was carried out, where several papers were listened to and enjoyed with benefit to all, and, above all, where many members were admitted and many others proposed. It must, however, be conceded that the Western delegation was not as fully represented as was desirable, and that our Western friends did not turn out in as goodly numbers as was expected by some. This can be easily accounted for, as, besides the ignorance of the doings of the Association (which has existed for years) on the part of our Western colleagues, there was a question in doubt, viz.: whether delegates of veterinary associations would be admitted. This is positively answered by Article 5, Chapter 1, of the Constitution, which reads:

ART. 5. The Association shall receive such delegates as the various State or County Veterinary Societies may elect, on proof of due qualifications.

This must be now well understood by every State association. They have the right—in fact it ought to be considered the duty of these State bodies to appoint delegates to any of the meetings of the Association, and every actual member of the Association

ought to make it a personal duty to see that delegates are appointed from their respective State Associations. No fee is asked or expected. The United States Veterinary Medical Association is bound by its objects and by its own regulations to admit such delegates. Let the State societies know this and there will never again be occasion for fear of the meetings falling through from want of attendants.

REPORTS OF MEETINGS OF STATE SOCIETIES.

When at the recent meeting of the United States Veterinary Medical Association Dr. Detmers moved that the AMERICAN VETERINARY REVIEW be the organ of the Association, Prof. Michener objected on the very proper ground that this journal had never been the organ of any special organization, but was ambitious only of being that of the entire profession, regardless of schools, colleges, etc. We have always held this ground, and the profession has already shown the appreciation of this fact, as can be seen by the number of reports of meetings which we have at times published. We take this opportunity to thank the secretaries of the several Associations which have sent us their reports, but at the same time will take the liberty of making a suggestion to them: that is, to forward us not only reports of the transactions of their meetings but also copies of the papers which are read. Many of these, no doubt, are interesting and valuable, information could be derived by reading them, and the fact that a paper may be directed to be printed in a journal which may be considered as the organ of the Association, ought not to prevent its publication in another, especially when that one is an independent journal, not affiliated with or under obligation to support or accept without comments the action of any scientific body. We hope that in the future the secretaries of State associations will see the good they can do to their organization, to their respective members, and to the profession at large in allowing the publication of the papers read at their meetings, and that they will favor us with a copy of the same to be printed afterwards in the pages of the REVIEW.

OPENING OF VETERINARY COLLEGES.

With this month's return, the opening of the veterinary colleges on this continent will take place. The American Veterinary College, in New York, opens the field on the 1st, Montreal on the 6th, Toronto on the 15th, Harvard has already begun, or is about entering into its second year, and Philadelphia has issued its announcement that the opening lecture of the first session will be delivered on the second of the month by Prof. Huidekoper. What great changes, when compared with the condition of a few years ago. Of course the attendance of students will vary; some of our schools will have but few, while others will count them by hundreds. But no matter; there is in this no reason for those which are less privileged to feel discouraged, it is merely a question of time. If half a dozen veterinary schools are now in existence in the country there is room for more. A larger number means more exertion on the part of the officers of each separate school, more exertion means better education and better facilities for study, and the grand result—advancement and elevation of our profession. The history of the veterinarian of the past closed with the establishment of veterinary schools twenty years ago; that of the veterinarian of the present is just now in its beginning; the veterinarian of the future, if we keep on, will in a few years equal, if not surpass, his much older confrere of the old world. After all, we can all feel proud of the progress that has been made.

REGISTER OF GRADUATES OF VETERINARY MEDICINE.

Continued from page 234.

ALUMNI OF COLUMBIA VETERINARY COLLEGE.

Balkam, Asa K.....	Lewiston, Me.....	1883
Berns, Geo. H.....	Brooklyn, N. Y.....	1879
Bowers, Geo. F.....	Brooklyn, N. Y.....	1882
Breder, Edward S.....	New York City.....	1882
Brunn, Armin E. B. S.....	Brooklyn, N. Y.....	1884
Charum, Emilio.....	New York City.....	1883
Cochran, David.....	New York City..	1879
Cuff, John.....	New York City.....	1879
Cuff, W. A. E.....	New York City.....	1883

Curtice, Fred. C., A.B.....	Moravia, N. Y.....	1883
Corcoran, Alexander.....	Brooklyn, N. Y.....	1884
DeClyne, Theodore F.....	New Durham, N. J.....	1883
Darling, S. A.....	New York City.....	1879
Douglass, Edward W.....	Brooklyn, N. Y.....	1882
Dunne, Charles.....	New York City.....	1881
Earl, H. E., M.D.....	New York City.....	1879
Finlay, R. W., V.S.....	New York City.....	1879
Finlay, R. A., V.S.....	New York City.....	1883
Finnegan, Thos. E.....	New York City.....	1883
Frey, M. L.....	New York City.....	1881
Gribble, William H.....	Churchville, N. Y.....	1884
Hance, Theodore F., M.D.....	Newark, N. J.....	1883
Hamill, James.....	New York City.....	1879
Hawk, J. W.....	Newark, N. J.....	1883
Humphrey, Winslow P.....	Elizabeth, N. J.....	1884
Hamlin, John.....	Wilkesbarre, Pa.....	1884
Johnston, David.....	Scarsdale, N. Y.....	1882
Jackson, Walter H.....	Poughkeepsie, N. Y.....	1883
Kœmpel, R. A., PhD., M.D.....	New York City.....	1883
Knox, Louis G., M.D.....	Patterson, N. Y.....	1884
Lindsay, John.....	Huntington, (L. I.) N. Y.....	1880
Lippincott, Thomas S.....	Harrisburg, Pa.....	1883
Lowe, W. Herbert.....	Little Falls, N. J.....	1883
Lenhart, Charles.....	Dover, Pa.....	1884
Meyer, Charles A.....	New York City.....	1879
MacLellan, Edward A.....	Bridgeport, Conn.....	1882
McLaughlin, J. Alex.....	Jersey City, N. J.....	1880
Mustoe, John F.....	Brooklyn, N. Y.....	1880
Mook, Wm. H.....	Metuchen, N. J.....	1884
Newman, Philip.....	Brooklyn, N. Y.....	1882
Nichols, William S.....	Keller's Church, Pa.....	1884
Naylor, Joseph, Ph D.....	Jersey City, N. J.....	1884
Parkin, Robert Lincoln.....	Romeo, Mich.....	1883
Parkinson, George H.....	Middletown, Conn.....	1881
Peck, E. J., M.D.....	New York City.....	1881
Parsons, Edwin A.....	New York City.....	1884
Rowland, H. W.....	Metuchen, N. J.....	1883
Ramacciotti, Hugo L.....	Omaha, Neb.....	1883
Simon, Theodore.....	New York City.....	1881
Shaw, William H., A.M.....	Roscoe, Ill.....	1883
Swan, Benj. H.....	Chesterfield Factory, N. H.....	1883
Soule, John A.....	Hyde Park, Mass.....	1883
Soula, William.....	New York City.....	1882
Sturges, Albert D.....	Wilton, Conn.....	1883
Snyder, Elias.....	Lynnville, Pa.....	1884
Shea, A. F. K. O.....	New York City.....	1884
Spencer, Albert H.....	Oak Orchard, N. Y.....	1884

Stoute, Richard A.....	Barbadoes, West Indies.....	1884
Stewart, Robert W.....	Mount Victory, O.....	1883
Schultz, Fred. E.....	Flatbush, (L. I.) N. Y.....	1883
Smith, Flavius J.....	Austin, Texas.....	1882
Subale, E. N. C.....	Orange Valley, N. J.....	1882
Slee, Henry C.....	New York City.....	1883
Thompson, Nathaniel F.....	New York City.....	1881
Toussaint, Frank J.....	Milwaukee, Wis.....	1884
Vanderhoff, H. S., M.D.....	Brooklyn, N. Y.....	1881
Walton, Frank.....	New York City.....	1879
Wallace, John.....	New York City.....	1880
Wilson, Frederick J.....	Brooklyn, N. Y.....	1879
Will, Paul.....	Johnstown, Pa.....	1883
Weise, Maxmilian.....	New York City.....	1883
Whittlesey, R. T.....	Emporia, Kans..	1883
Waters, R. E.....	Brooklyn, N. Y.....	1883
Windolph, John L.....	Darlington, Md.....	1883

CORRESPONDENCE.

RUPTURED STOMACH.

Editor American Veterinary Review :

Linville, Va., Sept. 10th, 1884.

The following may be of interest to some of your readers. I was called on September 3d, 1884, to see a fine stallion, "Clint Morgan," a rich mahogany bay, eight years old, 16½ hands high, well developed, weight 1,300 lbs.

History.—Clint had been fed the previous day at noon, on barley, chopped hay and water; at 1:30 P. M. was taken from his stall to tease a mare; she not being in season, he was returned. At 4 P. M., was found to be very sick, pawing with fore feet; trembling and partial sweats over body. The owner thought him to be suffering from colic and gave him various things, but did not get any desired results. By dark of the same evening cructations of gas were noticed, with occasional retching. It being a distance of twelve miles to my place, and thinking he might get better soon he did not send for me till next morning, when I saw him at 6 A. M. He was in a lot near the barn, lying on his left side, sometimes looking around to his right with a groan. Temperature, 103°; respiration, 40; pulse almost imperceptible; legs cold; ears cold; tremors of superficial muscles; eyes staring. I

asked the owner to get him on his feet, which being done, the horse at once began to step around with his hind feet towards the right, and continued this movement till we would permit him to go at his leisure, at which time he showed signs of delirium by traveling in a circle and walking into anything that happened in his way.

Diagnosis.—Impaction of the stomach; I gave an unfavorable prognosis; but "Clint" being a fine animal (the first premium for general utility being awarded him at the State Fair), the owner insisted on my doing something for him, saying: "as long as there is life there is hope." So I gave a drench of linseed oil ℥i. spts. turpentine ℥i; followed in a short time with pulv. aloes Barb. 3 vi., tr. nux. vomica, 3 i., given in pill; hot applications to abdomen. At this time I refused to do anything more, as I knew death would put an end to his sufferings soon. About this time the horse vomited, and continued to do so at intervals of 3 to 5 minutes. The horse at no time was quiet nor did he lie down from the time we got him on his feet at 6 o'clock until 7 o'clock, when he fell, and death followed within three minutes. Made post-mortem immediately, and upon opening the abdomen about two gallons of amber colored fluid escaped. Going still further, traces of peritonitis were observed, and after laying back the entire left side of the abdominal wall, found the stomach to be ruptured at the lesser curvature, sufficiently large to admit the passage of my hand. Judging from the amount of ingesta that yet remained in the stomach and that which had escaped by the mouth and nostrils, and into the abdominal cavity, the organ must have been very much distended. The horse had also suffered to some extent from gastritis. He had always been a very fast feeder, though he never was known to suffer any inconvenience from it up to this time.

JOHN A. MYERS, D.V.S.

NATIONAL VETERINARY MEDICAL ASSOCIATION.

Brooklyn, N. Y., Sept. 12th, 1884.

Editor American Veterinary Review:

It would be folly on my part to reply to Mr. James' letter which appeared in your last issue, otherwise than to quote the

following from the Constitution of the National Veterinary Medical Association.

“ARTICLE 3.

“MEMBERS.

“SEC. 1. All members shall be admitted through their respective State societies. Said societies shall be held responsible for their members' proper credentials and character, and the above National Veterinary Medical Association shall have the right of rejection.”

As we have not had our annual meeting since our Association was organized and chartered, it would be advisable for all impatient and fault-finding parties to await the result of the action of the National Veterinary Medical Association ere they throw any missiles at that association on its State organizations.

Respectfully,

L. V. PLAGEMAN,

President National Veterinary Medical Association.

VETERINARIAN WANTED.

STAMFORD, CONN., Aug. 30th, 1884.

Secretary American Veterinary College, New York.

Dear Sir: There is a capital opening in this town for a good veterinary surgeon, and I write to ask if you know of a competent person to fill the place. To such a person I would be glad to extend assistance in getting started here.

Yours truly,

HENRY R. TOWNE.

SOCIETY MEETINGS.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The twenty-second annual meeting of this Association met at the Grand Hotel, Cincinnati, Ohio, on Tuesday, Sept. 16th, at 11 A. M.

The session of the Comitia Minora was taken up by the examination of candidates for admission, or of their credentials.

In cases where neither the candidates nor their credentials were present the Secretary was instructed to notify such of these requirements.

After reading and accepting minutes of last meeting, the order of business was changed to admit to the meeting all candidates present.

Under the head of "unfinished business," the Association decided to increase the number of Censors from five to seven.

Reports of committees followed.

Prof. Liautard gave a very interesting report, as Chairman of the Committee on Diseases, as did also W. H. Hoskins, of the Committee on Intelligence and Education. Discussion of these reports was deferred until later in the meeting.

The President, Dr. Miller, here appointed a committee of three, consisting of Drs. Meyer, Liautard and Robertson, to draft a set of resolutions relative to the death of Wm. Saunders, V.S., said resolutions to be forwarded to his widow.

There were a number of applicants for membership presented, and from the fact of these coming from *different veterinary schools*, the Association felt that its numbers and usefulness had received a great impetus.

The election of officers resulted as follows: President, W. B. E. Miller, of Camden, N. J.; Vice-President, L. H. Howard, of Boston, Mass.; Secretary, Chas. B. Michener, New York; Treasurer, Chas. Burden, New York.

Censors.—A. Liautard, New York; Jas. L. Robertson, New York; W. H. Hoskins, Phila.; J. Meyer, Jr., Cincinnati, Ohio; J. Corlies, Newark, N. J.; W. Bryden, Boston, Mass.; W. J. Crowley, St. Louis, Mo.

The President then appointed the following regular committees; *Library Committee*—Drs. Coates and W. D. Critcherson. *Intelligence and Education Committee*—Drs. J. L. Robertson, Howe, Lyman, W. H. Rose,—Detmers. *Finance Committee*—Drs. Pendry, Dixon and John Saunders. *Diseases Committee*—Drs. Liautard, Winchester, Zuill, J. Meyers, Jr., Hopkins. *Prize Committee*—Drs. Corlies, Peabody and Johnson.

The Treasurer's report was then read and accepted.

An adjournment was here taken for dinner. Several toasts were given, among which was, "The Veterinary Profession: the part it has taken in Scientific Advancement of the past ten years." This was ably responded to by Dr. Detmers.

Under the head of new business, the Secretary's salary was increased from twenty to fifty dollars a year.

On motion of Dr. Howe it was ordered that the Secretary have printed annually the names and addresses of the officers and members of this Association, and that a copy be sent to each member.

Dr. Detmers then moved that the AMERICAN VETERINARY REVIEW be made the official organ of this Association.

Dr. Michener strongly condemned any such action on the part of the Association, and held it to be unwise to make *any* journal the official organ of an association that *knows no special school or set of men*, being, as it is, a *United States Association*, and being comprised of members from *all* schools.

This sentiment was heartily endorsed, and Dr. Detmers cheerfully withdrew his motion.

PAPERS AND DISCUSSIONS.

The report of Diseases Committee was first taken up. Prof. Liautard urged that veterinarians be compelled to report all cases of contagious diseases. Dr. Detmers held this to be unfair, unless the State first recognized the veterinary surgeons. This was also the opinion of Dr. Miller. After a general expression of opinion *pro* and *con*, Dr. Liautard offered the following resolution, which was carried by vote:

"*Moved* that the United States Veterinary Medical Association at the anniversary meeting held in Cincinnati on the 16th of Sept, 1884, suggest the obligation on the part of veterinarians and veterinary practitioners to report to the proper authorities every and any case of contagious disease he may meet in his practice, in the same manner as the human practitioner is obliged to do in his specialty, under the liability of penalty for punishable offences."

After discussing the report by Dr. Hoskins, of the Committee

on Intelligence and Education, the following motion by W. H. Hoskins was adopted :

“*Moved* that the President appoint a committee of three to confer with the faculties of the veterinary colleges and schools of North America as to their willingness for a convention of the same, to discuss the advisability of adopting a mutual standard of excellence or examination ; and that these three be from different schools.” Dr. Hoskins, of the American Veterinary College, Dr. Howe, of Toronto Veterinary College, and Dr. Bryden, of the Montreal Veterinary College, were appointed.

A most interesting and instructive paper was then read by the Secretary on the subject of “A Suggestion concerning the Operation of Neurotomy on Trotting Horses,” by T. S. Very, V.S., of Boston.

A paper by Dr. Dixon was ordered published, and to be brought up at the next meeting as unfinished business.

A paper prepared by Dr. Liautard on the subject: “New Discoveries in some Contagious Diseases: Tuberculosis, Anthrax and Rabies,” as well as one from J. Meyer, Sr., on “Pleuro-Pneumonia,” were crowded out for want of time. These, with other essays, will be published.

Dr. J. Meyer, Sr., then extended an invitation to all present to remain in the city and be his guests the next day, an invitation that was gladly accepted by most present.

Votes of thanks were given to those who favored the Association with papers. While the convention was not as large in numbers as could have been hoped, yet it may be justly said that it was one of the most pleasant and profitable meetings ever held by the Association.

CHAS. B. MICHENER, *Secy.*

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

(Specially reported for the REVIEW by W. HORACE HOSKINS, D.V.S.)

The regular monthly meeting of the Keystone Veterinary Medical Association was held on Saturday evening, September 6th, 1884. President Zuill called the meeting to order, and on

roll call the following members responded: Drs. Hauca, Zuill, Hoskins, Huidekoper and Rogers. After a correction in the minutes they were adopted. Drs. Ward B. Rowland and S. L. Weber were elected to membership.

An amendment to the constitution was adopted, changing the day of meeting from the first Saturday to the first Thursday evening of each month.

Dr. W. L. Zuill was chosen delegate to the United States Veterinary Medical Association at Cincinnati, to represent this Association.

The subject of methods of administration of medicines was then brought up by Dr. Hoskins, and after citing many forms in use, others were cited by members present.

Dr. Hoskins took this opportunity of referring to the usefulness of State associations, and the good work to be accomplished when they were wisely controlled. He advised every qualified practitioner to identify himself with them and thus increase and direct the good work.

Dr. T. B. Rogers extended an invitation to the members to visit South Jersey, where they could now see an important outbreak of hog cholera, and witness some autopsies on the same. After the reporting of several interesting cases the meeting adjourned.

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

(Specially reported for the REVIEW by W. HORACE HOSKINS, D.V.S.)

The annual meeting of the Pennsylvania State Veterinary Medical Association was held at the Keystone Hotel, Reading, on Tuesday, September 2d, 1884. President Sallade occupied the chair. On roll call twenty-three members responded to their names.

After the reading and adoption of minutes of the previous meeting, the election of officers for another year took place, resulting as follows: President J. W. Sallade, Topton, Pa.; 1st Vice President, T. B. Raynor, Phila.; 2d Vice President, Charles Schaufler, Phila.; 3d Vice President, Charles T. Goentner, Bryn Mawr; Recording Secretary, R. Gladfelter, Phila.; Corres-

ponding Secretary, Alex. Glass, Phila.; Treasurer, J. C. Fly, Phila. The following members compose the Board of Censors: W. Horace Hoskins, Geo. B. Raynor, W. L. Zuill, W. S. Kooker and J. H. Keeler.

Five members were proposed, as follows: Dr. W. Milleisen, of Mechanicsburg; Dr. J. H. Keeler, of Kulpsville; Dr. S. L. Weber, Green Lane; Dr. Solomon Hoffman, of Hamburg, and W. U. Custer of Reading. The Board of Censors reported favorably on the last three members, and unfavorably upon the first two candidates. The report of the Board was accepted by the Association.

The Corresponding Secretary reported the reception of a letter of resignation from Francis Girard of Philadelphia, in response to a petition sent him asking for the same. A discussion arose at this point as to whether the above should be received, and a motion to accept the letter was lost; after which a motion to expel the member for his unprofessional and dishonorable methods of practice, was offered and unanimously adopted. The Secretary reported the reception of two letters from the Secretary of the National Veterinary Medical Association, notifying the Association of the by-laws of the same, calling for an assessment of \$1. from each member of State Associations; also asking if we had appointed delegates to the National Association. After some unfavorable discussion, they were ordered to be laid upon the table.

Dr. W. L. Zuill as chairman, reported progress on the securing of a certificate of membership, a copy of which was shown, being beautifully and tastefully engraved.

The names of Drs. Geo. B. Raynor and W. S. Kooker, were added to the committee on bill of legislation.

A committee, composed of the following members, was appointed to revise the Constitution and By-Laws: Drs. Hoskins, Zuill, Glass, T. B. Raynor and John Berry.

At the afternoon session Dr. John R. Hart of Phila. read an essay entitled Paralysis; and Dr. T. S. Lippincott of Harrisburg, one on the subject of strangles. Much valuable discussion followed on the point of glanders or farcy following as a result

of strangles, the weight of opinion being against this point. Essayists were appointed for the next meeting. After a vote of thanks being extended the essayists and the President, the meeting adjourned to meet in Philadelphia the coming March.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of the Ohio State Veterinary Medical Association took place in the Tyndal Room, City Hall, Columbus, on the 3d and 4th of Sept. The meeting was called to order at 7:30 P. M. on the 3d, by the President, Dr. W. C. Fair, Cleveland, who stated the objects of the present meeting and then called on the Secretary, Dr. Waddel, Columbus, to call the roll. The following gentleman answered to their names: W. C. Fair, V.S., Cleveland; J. V. Newton, V.S., Toledo; T. B. Colton, V.S., Mount Vernon; W. A. Labron, V.S., Xenia; J. M. Waddle, V.S., Columbus; J. S. Butler, V.S., Piqua; T. B. Hillock, V.S., Columbus; W. R. Howe, V.S., Dayton; L. B. Chase, V.S., Berlin; R. W. Whitehead, V.S., Youngstown; J. C. Meyer, M.D., V.S., Cincinnati; C. C. Crane, V.S., Akron; J. B. Crane, V.S., Sharon Centre; W. Huntsberger, V.S., East Union; W. E. Wright, V.S., Delaware; A. H. Tanner, V.S., Ashtabula; J. E. Taylor, V.S., Toledo; J. B. Hillock, V.S., Lancaster. The gentlemen present who were not members, were: G. W. Butler, V.S., Circleville; L. A. Severcool, V.S., Norwalk; E. A. Ebersole, Fostoria; S. D. McClure, V.S., Sandusky; James A. Lee and T. E. Jones, Mount Vernon; A. J. Smith, Pleasant Hill, and Dr. Salmon, D.V. M., of the United States Department of Agriculture, Washington, D. C.

The minutes of the previous meeting were then read and approved, and the following gentlemen were proposed for membership: G. W. Butler, V.S., Circleville; L. A. Severcool, V.S. Norwalk; and A. J. Smith, Pleasant Hill. The two former, being graduates, were admitted to membership. and the latter gentlemen referred to the Board of Censors.

Dr. Salmon was then called upon to address the meeting and describe briefly the disease, pleuro-pneumonia contagiosa, and

the distinguishing symptoms between it and tuberculosis. He said he was very much pleased to be present, but would not attempt anything like a full description of the disease, but would give a few points in regard to the disease.

Most veterinary surgeons have had very little experience with the disease, and it was embarrassing to those to go into a herd of cattle and examine them, and give a definite opinion, especially when the disease exists in a chronic form.

He went on the force five years ago in New York, and found it very difficult to pick one or two out of a large herd, affected with the chronic form, when not able to learn the previous history. In the acute form of the disease there was a high temperature, hurried respirations, and other evidences of acute lung trouble. Then it was not hard to diagnose; but when these symptoms were absent, as in the chronic form, it was much more difficult. In the chronic form the examiner can only rely on auscultation and percussion, and the history. It requires constant practice to become an adept in the examination of the chest.

In Illinois he found the disease in the acute form, but in Ohio had only found it in the chronic form. In tuberculosis there is cough, mucus in the bronchial tubes, and the lungs more resonant. The glands are enlarged two or three times their natural size. Acute cases seldom recover.

In pleuro-pneumonia contagiosa, the lung is hepatized more or less, with loss of respiration in such portions. Clear history, etc. Sometimes it is not safe to give a definite opinion in the chronic form, where you cannot get the history, until you kill an animal and hold a post mortem. Was pleased to see so many veterinary surgeons in this State and it afforded him great pleasure to see so many present. He felt sure for intelligence we would yield but little to our sister profession. Each one in the veterinary profession has a duty to perform which is equal to those in the sister profession in regard to contagious disease.

This is one of the greatest stock-raising countries in the world, and he hoped it would never become ravaged to any great extent with the above disease, or any other contagious disease. We are dependent upon the veterinary surgeons throughout the

country for information in regard to contagious diseases, and hoped every one would feel it his duty to report to the Bureau of Animals Industry at Washington, D. C., so we can institute measures for their suppression. The national law will be made better this winter, and if we all act in an unselfish manner can very easily suppress all such diseases. He would not take up any more time and would be pleased to shake every one by the hand before leaving.

Dr. Whitehead then asked whether anything had been done in the way of inoculating for the prevention of contagious pleuro-pneumonia in this country.

Dr. Salmon said it had been tried, but was not needed in this country. A drawback to inoculation was that it produced a sore and the animals in switching their tails would scatter the poison and keep up the infection, unless disinfection was resorted to often. In Holland, in districts where inoculation is practised, the disease still exists; but where the animals are killed at once they have entirely wiped out the disease. It must be stamped out by killing and burying or burning, to be effectual. Hoped to have a law soon that would permit one to go into a herd and kill every animal, and compensate a man fairly for his cattle, and that is the only way it will ever be stamped out. It is in a narrow belt now, and if the proper measures are taken it can be exterminated. Have made representations to Congress, but received in reply, that it was impossible for it to be in the West; but at the same time the disease was working its way westward, and the present outbreak in Illinois was a good illustration of the above. There is great difficulty in tracing it at the present time, as animals have been scattered over considerable territory. Some have been sent to Kentucky from Illinois, and the disease has broken out among them; some have been sent to Missouri, but nothing has developed there. Hoped to soon have it in check.

The four gentlemen who were to have been present at this meeting and go before the Board of Censors, did not appear.

The Corresponding Secretary, Dr. Butler, was then called upon to read communications, correspondence, etc. He read a communication from G. O. Harlan, of Fremont, censuring the Associ-

ation in very strong language for asking him to go before the Board of Censors before being admitted to membership. He claimed to be a graduate of the old Philadelphia College, and thought its graduates ought to be recognized.

Quite a lengthy discussion then took place by several of the members in regard to Mr. Harlan's letter, and it was finally moved and seconded that Drs. Fair and Newton be delegated as a committee to have an interview with Mr. Harlan in regard to his letter and admission to the Association.

The committee appointed at the last meeting was then called upon to report on a code of ethics and revision of the by-laws. Dr. Colton being the chairman of the committee, asked for an extension of time, as they had not yet fully considered the matter, but would report at the next meeting. The time was granted the committee.

It was moved and seconded that Dr. Meyer, Cincinnati, act on said committee in the absence of Dr. Blanchard. Carried.

It was moved and seconded that a committee be appointed to draft resolutions of respect to the late Dr. G. W. Bowler, and a copy be sent to the widow and family of the deceased, and also be recorded upon the minutes of the Association. The following gentlemen were then appointed: J. V. Newton, V.S., Toledo; R. W. Whitehead, V.S., Youngstown; J. S. Butler, V.S., Piqua.

The assessment of one dollar on each member of the Association for the support of the National Association was then discussed.

Moved by Dr. Newton, seconded by Dr. Colton, that this Association endorse the action of Dr. Fair in appointing delegates to the National Convention last December, and that we endorse and support the National Association.

Moved by Dr. Howe, seconded by Dr. Meyer, as an amendment, that this Association condemns the action of Dr. Fair in appointing delegates to the National convention and making this Association a part and parcel of said Association. The amendment was put and lost, yeas, 6; nays, 11. The original motion was then put and carried, yeas, 11; nays, 6.

Dr. Fair then thanked the Association for sustaining his

action in the matter, and would at any time abide by a majority of the members, whether we endorse the National or United States Association.

Moved by Dr. Colton, and seconded by Dr. Meyer, that this Association tender Dr. Salmon a vote of thanks for his presence here this evening, and his able address.

Moved by Dr. Newton, and seconded by Dr. Meyer, that we adjourn until 8:30 A. M. to-morrow. Carried.

SECOND DAY.

The morning session opened at 8.30 A. M., with Dr. Fair in the chair. He then called upon Dr. Whitehead to read his essay on tuberculosis, which was a very lengthy and interesting paper.

The appointment of delegates to the National Convention was the next in order, and the following gentlemen were chosen: J. V. Newton, Toledo; J. S. Butler, Piqua; T. B. Colton, Mount Vernon; T. B. Hillock, Columbus; L. A. Severcool, Norwalk.

Dr. Chase, chairman of the Board of Censors, was then called upon to report the action the board had taken in regard to the admission of Mr. A. J. Smith into the Association. Dr. Chase said the gentleman had passed a very creditable examination. The report was discussed and the gentleman admitted and introduced to the members. He responded in a few well-chosen remarks.

Moved and seconded that Dr. Whitehead be tendered the thanks of the meeting for his very able paper on tuberculosis, and that copies be sent to the veterinary journals for publication.

Moved and seconded that an order be drawn on the Treasurer for hall rent, gas, ect. Carried.

Moved and seconded that John Rose, Columbus, be requested by the Secretary to appear at the next meeting of the Association and show cause why he should not be expelled from the Association, and answer to charges preferred against him. Carried.

Moved and seconded that a committee of three be appointed on contagious diseases, and that they wait upon the State Board of Agriculture and the Legislature, and take such steps as may be advisable in regard to the suppression of contagious diseases, and the appointment of a State Veterinarian. Carried. The

following gentlemen were then chosen: T. B. Colton, Mount Vernon; T. B. Hillock, Columbus; and W. E. Wight, Delaware.

Moved and seconded that the expenses of the committee be borne by the Association. Carried.

Moved and seconded that our next annual meeting be held at Toledo, on December 27th, 1884, at 10 A. M. and that Dr. Newton be delegated to secure a place for the meeting. Carried.

Dr. Butler volunteered to read a paper on pleuro-pneumonia contagiosa, and Dr. Wight one on epizootic cellulitis, or pink-eye.

The meeting then adjourned.

J. S. BUTLER. *Cor. Secy.*

MASSACHUSETTS VETERINARY ASSOCIATION.

The fourth regular meeting of the Massachusetts Veterinary Association was held at the rooms of the Medical Library Association, No. 19 Boylston Place, Wednesday evening, Sept. 3d, 1884, and was called to order at 7:45, with W. Bryden in the chair.

Thirteen members answered the roll call. Minutes of the last meeting read and approved.

Dr. Lyman made a motion and it was seconded and carried, that the name of the college from which each member of the Massachusetts Veterinary Association graduated be appended to his name.

The Executive Committee reported favorably on the credentials of F. S. Thomas, V.S., Hanson; W. A. Sherman, D.V.S., Lowell; J. E. Gardner, D.V.S., Greenfield; and Fred. Saunders, D.V.S., Lynn. They were then balloted for and admitted members of the Association.

It was moved by Dr. Skally that the Executive Committee report upon a by-law to the effect that the reading of the essay follow immediately the reading of the minutes of the last meeting, and also to draw up a regular order of business. Seconded and carried.

Moved by Dr. Lyman that the society add a *pro tem.* member of the Executive Committee during the absence of Dr.

Billings. Seconded and carried. Dr. Blackwood was nominated and elected a member *pro tem.* of the Executive Committee.

Dr. Lyman made a few remarks upon a case of contagious pleuro-pneumonia he was called to see in Brooklyn, N. Y., and it was then moved and seconded that he read the report he had prepared instead of the essay on "Article I. Section 2." Carried. After a general discussion of the subject he was tendered a vote of thanks. Dr. Billings sent in a paper "to be opened and read at the meeting" and Dr. Lyman moved, and it was seconded, that the paper be referred to the Executive Committee. Lost.

The reading of Dr. Billings' paper by the Secretary was begun, when Dr. Lyman moved that the further reading of Dr. Billings' resignation from the Executive Committee be suspended, for there had been no charge against him as a graduate of a veterinary school by the Association. This was amended by Dr. Osgood, that the resignation be submitted to three members of the Association appointed by the chair. Amendment seconded and carried.

Dr. Lyman moved, and it was seconded, that the further reading of the resignation of Dr. Billings be postponed, so far as the Association is concerned, and proceed to vote on the resignation of Dr. Billings. Lost.

Drs. Bunker, Osgood and Howard were appointed a committee to report on the paper. Dr. Bunker reported for the committee that the paper was not necessary for the Association, but his resignation from the Executive Committee being made known, it was then accepted, and Dr. Blackwood elected to fill the vacancy.

Dr. Lyman, after a few remarks, tendered his resignation to the Massachusetts Veterinary Association.

Dr. Blackwood moved, and it was seconded, that Dr. Lyman's resignation be *not* accepted. Carried.

Moved and seconded that Dr. Lyman be notified by the Secretary that his resignation is not accepted. Carried.

Dr. J. B. Coleman presented his credentials to the Executive Committee, and they were satisfactory.

J. M. Skally was appointed essayist and the meeting adjourned.

J. S. WINCHESTER, D.V.S., *Secy.*

CONNECTICUT VETERINARY MEDICAL SOCIETY.

The regular bi-monthly meeting of the above Society was held at the usual place in New Haven, on Tuesday, Aug. 5th. The President, Dr. W. J. Sullivan, in the chair.

There were present Drs. F. E. Rice, W. K. Lewis, E. C. Ross, E. A. McLellan, A. D. Sturges, Geo. H. Parkinson, Nathan Tibbles and Thos. Bland.

The minutes of previous meeting were read and approved.

Dr. E. A. McLellan read a very lengthy and carefully prepared paper on "The Surgical or Mechanical Treatment of Diseases of the Feet." In speaking of quarter-crack, the essayist said that he generally found unequal pressure at the coronet on the side on which the crack had formed, the wall being deeper than on the other side, and the coronary structure pushed upward and inward, the pressure of the horn so lessening nutrition and the descending pastern pressing upon the adjacent tissues, causing fracture of the thin and weakened wall.

The treatment he recommended was first to reduce the wall at the plantar border so as to remove as far as possible the undue elevation of the coronet, then thin the bar and planter horn on same side and apply a spring between the heels in such a manner as to widen them at their most posterior point. The crack will then be closed unless it should be very wide and its edges everted. In any case he advised that a transverse incision should be made at the superior extremity of the fissure, and in applying the shoe it should bear evenly from toe to heel on both sides. The spring should be used until the wall became sound. In case of a foot predisposed, the occasional use of the spring will prevent a recurrence of the crack.

The various foot troubles, such as chronic laminitis, corns, thrush, ossification of lateral cartilages, etc., were exhaustively treated, and at the conclusion of reading of the paper, a lively discussion ensued, the essayist successfully combatting the multitude of questions that were put to him.

The Secretary was chosen to read a paper at the next meeting. It was voted that a reserve fund should be created by a month-

ly assessment on each member of the sum of twenty-five cents, said fund not to be drawn upon except by a two-thirds vote of the entire membership of the Society.

A committee of three was appointed to obtain designs of membership certificates, and present at next meeting. The meeting terminated with a vote of thanks to Dr. McLellan for his interesting paper.

THOS. BLAND, *Sec'y.*

KANSAS STATE VETERINARY ASSOCIATION.

At the meeting held September 12th, at Topeka, Kansas, for holding a State Veterinary Association the following officers were elected: Dr. A. A. Holcombe, President; Dr. Young, of Abilene, Vice-President; Ed. R. Allen, of Topeka, Secretary; Dr. Willhite, of Emporia, Treasurer.

A Board of Censors was elected as follows:

Dr. W. D. Epperson, Ottawa; C. L. Moulton, Leavenworth; D. P. Young, Abilene; J. H. Willhite, Emporia; O. W. Murphy, Lawrence.

The organization adjourned to meet in Topeka on Thursday, December 15th, at which time papers will be read on subjects of interest to the Association.

NEWS AND SUNDRIES.

HOG CHOLERA.—This disease has prevailed in different States for a long time, and is increasing.

QUARANTINE AGAINST AMERICAN CATTLE.—Dr. McEachran, inspector of the Dominion cattle quarantine, maintains that nothing but an absolute embargo against American cattle will prevent the introduction of plenro-pneumonia into Canada.—*Maine Farmer.*

PROLIFIC COW.—A cow in County Carlow, Ireland, has produced four heifer calves in ten months. The cow was calved April 4, 1881, had her two first calves on July 25, last year, and two more on the 25th of May, this year.—*Weestern Rural.*

LIFE OF MARES.—As a rule mares are longer lived than geldings and the majority of instances of prolonged life are among the former. The *Pennsylvania Record* states that Charles Smedley, residing near Media, owns a mare forty-two years old, and she is still able-bodied, being capable of doing as much hauling as the majority of horses one-third her age.—*American Farmer*.

HOG CHOLERA IN NEW JERSEY.—A special dispatch from Phillipsburg, New Jersey, says: The hog cholera is playing havoc with the swine in this place. Within the last four weeks between fifty and sixty hogs have died shortly after being taken with that disease. Some of the hogs die within twenty-four hours after the first symptoms of the disease are noticeable, and others live for three days.

THE CONDITION OF THE BLOOD IN HYDROPHOBIA.—In an examination of the blood drawn rapidly from the vessels, especially from the sinuses of the dura mater, Dr. Romiti (*Rivista Clinica*, July, 1884) found it to be of a dark red color and not coagulable spontaneously. The red globules were rather pale, and when the preparation was stained by Bizzozero's method, and placed under an immersion lens, there appeared a mass of granular matter in which the white globules seemed to be imbedded. These appearances were similar to those presented by the blood of persons killed by snake bites.—*Medical Record*.

A MILD FORM OF HYDROPHOBIA.—There seems to be little doubt that the following curious series of events occurred near Eufaula, Ala. On July 25th a dog on a plantation bit a mule and several hog; nineteen days later the mule and one of the hogs died with the symptoms of tetanus. Within the next week three more of the bitten hogs died with the same symptoms. The dead hogs were eaten by some thirty negroes, about half of whom were within ten or fifteen days attacked with what Dr. Johnson, the attending physician, calls "a mild form of hydrophobia."—*Medical Record*.

DESTROYING GERMS—Dr. Dobell, in writing to the *London Times*, directs attention to a method of destroying cholera and typhoid germs, in drinking-water, by passing through it an electric

current, and thereby exposing it to the influence of nascent oxygen, by which means the water would be dezymotized. This suggestion of Dr. Dobell's seems to have been forestalled by the construction of a filter invented by Dr. Stephen H. Emmons, which is now on view at the offices of the Economic Electric Company in London. The filter consists of an earthenware vessel, in which are placed porous cells containing carbon plates, the spaces between the plates and the cells being partially filled with animal charcoal. The plates are coupled up with the positive pole of the Leclanché battery or of one of the company's own chromozone batteries. Alternating with the porous cells are other carbon plates, which are coupled up with the negative pole of the battery. The water is supplied into the porous cells, and passes through the charcoal to the exterior of the cells, and is drawn off by a tap in the usual way. It is claimed, that by this means, the water being submitted to the influence of the evolved nascent oxygen, as suggested by Dr. Dobell, the *materies morbi* of typhoid, cholera, and similar disease are destroyed, and that an end is put to the dreaded danger of 'death in the pot.'—*Science*.

TYPHOID FROM MANURE.—In a communication to the *Lancet*, Mr. Lawrence puts forward the theory that typhoid fever is capable of being set up *de novo* by bovine evacuations. In support of it he cites a number of cases that came under his observation while practicing medicine in South Africa, in which, although the sparse population was favorable to the tracing of infection, no connection with a previously-existing case of typhoid could be detected, while there was always evidence of the access of cattle-manure to the drinking water. In no case was he able to ascribe the disease to horse-manure or to sheep-manure, the latter of which, at the large sheep farms of the Boers, is said to lie in enormous quantities close by their dwelling-houses. It certainly is a curious fact, as pointed out by Mr. Lawrence, that many typhoid epidemics, of which the history has been traced to this country, have originated from dairies, although this has hitherto usually been attributed to the great susceptibility of milk to contract contamination.—*Farm and Fireside*.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Veterinarian, Veterinary Journal, Journal de Zootechnie, Presse Veterinaire, Echo Veterinaire, Recueil de Medecine Veterinaire, Archives Veterinaria, Gazette Medicale, Revue Scientifique, Clinica Veterinaria, Revue fur Thierheilkunde und Thierzucht, Annales de Bruxelles, Schweizer Archiv fur Thierheilkunde, Quarterly Journal of Veterinary Science in India.

HOME.—Journal of Comparative Medicine, Medical Record, New York Medical Journal, American Agriculturist, Country Gentleman, Prairie Farmer, Breeders' Gazette, National Live Stock Journal, American Cultivator, Scientific American, Turf, Field and Farm, Spirit of the Times, Science, Annals of Hygiene.

JOURNALS.—Western Farmer, Maine Farmer, Ohio Farmer, Practical Farmer, Hearth and Home, &c., &c.

PAMPHLETS.—Esposizione della R. Scuola Superiore de Medicinia Veterinaria di Milano, Royal (Dicks') Veterinary College Prospectus, 1884-'85, Official Report of the State Veterinarian to the Governor of Illinois, Report of Commissioners on Contagious Diseases of Cattle of Maine.

BOOKS.—Simple Ailments of the Horse, by W. T.

AMERICAN VETERINARY REVIEW,

NOVEMBER, 1884.

ORIGINAL ARTICLES.

REPORT ON THE RECENT CATTLE DISEASE IN KANSAS.

BY PROF. JAMES LAW, of Cornell University.

(Continued from page 297.)

NATURE OF ERGOT.

Ergot was at one time supposed to be the seed altered by disease, but the researches of De Candolle, Queckett, and more recently of Tulasne demonstrated that it is a distinct product, a fungus, which fixes itself on the pistil of the grass and destroys the seed while taking its place. The fungus is known as the *Claviceps purpurea*, and Tulasne has traced it through the three successive stages of its life history.

The first stage commences with the development of the pistil, as a parasitic growth on the outer membrane of the ovary of the grass, which it completely replaces, growing upon the inner membrane and obliterating the cavity of the ovary. This product—the sphacelia of Tulasne—is an oblong fungous mass, soft, tender, almost homogeneous, and covered with sinuous furrows. The external surface, and that of irregular cavities hollowed out in its interior, are covered by linear parallel cells, from which grow out oval cells—conidia, the spermatie of Tulasne—from five to seven thousandths of a millimeter in length, which spread themselves on the investing glumes. A mouldy product seen on the summit

of the pistil is really an independent fungus. At an advanced stage of the development of the sphacelia an adhesive fluid exudes from its surface, carrying with it many of the conidia, and concretes in the form of oily-looking dark spots.

Soon the second stage is reached by the development of the ergot at the base of the sphacelia and at first invested by it. It is compact violet-black outside and white within, and grows rapidly in all directions, extending out of the glumes, carrying on its summit the withered remnant of the sphacelia, and sometimes, also, some remaining traces of the aborted ovary, including its terminal hairs. The fully-developed ergot, or sclerotium, which projects from the glumes for a greater or less distance, according to the natural size of the seeds in the plant attacked, is familiar, by its black or violet spur-like aspect, slightly curved, marked with longitudinal furrows, and often presenting at intervals whitish patches, where the originally investing sphacelia has been removed. In one case watched by Tulasne it required a month for the ergot to pass through these two stages to its full development. In anatomical structure the ergot bears no resemblance to the seed, but is essentially the sclerotic mycelium of a fungus. Its parenchyma is hard, dry, brittle, and made up at all points of minute utricles, with thick walls containing a comparatively transparent oil, very slightly colored by iodine. No starch is usually found, though mentioned in the analysis of Legrip given below.

The third and last stage consists in the development on the surface of the ergot of minute bodies like toadstools. On soil in which the ergot has been dropped these bodies grow up on stems one-quarter to one-half inch in height, with a globular head one-twelfth inch in diameter, the whole growing out of the ergot as a potato plant grows out of the tuber. The cavities in the globular head are filled with sporidia, which, coming in contact with the soft ovary of the grass at the earliest stage of its development, grows into the sphacelia and ergot. If these sporidia are washed into the soil where rye is planted they determine the development of ergot in the coming crop, and it is supposed by many that the spores are taken up by the rootlets and carried to the flowers in the juice of the plant. The fungus developed in the soil from the implanted ergot belongs to the genus *Spæria*.

Analysis of ergot. Ledrip.

Yellow fixed oil.....	34.50
Starch.....	2.75
Albumen.....	1.00
Inuline.....	2.25
Gum.....	2.50
Uncrystallizable sugar.....	1.25
Brown resin.....	2.75
Fungine.....	3.50
Vegeto-animal matter.....	3.50
Osmazone.....	0.75
Fatty acid.....	0.50
Lignine.....	24.50
Coloring matter.....	0.50
Fungate of potassium.....	2.25
Chloride of sodium.....	0.50
Sulphates of calcium and magnesium.....	0.50
Subphosphate of calcium.....	1.25
Oxide of iron.....	0.25
Silica.....	0.15
An odorous principle, not isolated.	
Water.....	2.50
Loss.....	2.35
	<hr/> 100.00

Various organic constituents have been separated and advanced as the active principle of ergot. Wiggers attributes its action to ergotine, and Dr. Wright to the fixed oil, but manifestly without sufficient grounds. Winckler isolated secale as a principle identical with propylamia, the odorous ingredient in herring pickles, but if active at all this is only so in a secondary sense. Wenzell, of Wisconsin (confirmed by Hermann, of Germany), isolated the alkaloid *ecbolina* which causes cerebral disturbance and lowering of the pulse. Wenzell found *ergotina* possessed a similar but much less potent action. Dr. Levi sustains this view of *ecbolina* and *ergotina* as affecting the brain and heart, but denies that they have any action whatever on the gravid uterus. This he found to be caused by the phosphoric acid present in the ergot.

MODE OF ACTION OF ERGOT.

The most prominent physiological action of ergot, whether taken internally or applied locally, is its power of causing contraction of involuntary muscle. This contraction of the muscles in

the walls of the capillary blood-vessels explains readily the stoppage of circulation in, and death of the parts the farthest removed from the heart and where the circulation is weakest; in other words, the occurrence of dry gangrene. In the same way is explained the power of ergot to arrest hæmorrhages and mucous discharges, whether it is applied locally or taken internally. Even abortions are sought to be explained on the ground of its causing contractions of the involuntary muscular fibers in the walls of the womb, and the nervous disorder and depression of the heart's action by the diminished circulation through the capillary vessels of the brain and heart respectively. There is reason to suppose, however, that, as in the case of various other fungi, the principles of ergot act directly on the nervous substance, inducing the various phenomena of nervous disorder, and indirectly contributing to the derangement of the heart and stomach. If we accept the results reached by Dr. Levi, we must acknowledge the action on the brain and womb to be respectively primary and distinct, seeing they are produced by the two ingredients, ecbolina and phosphoric acid.

The whole subject of the different forms of ergot and smut, and of other fungi, in their action on the animal system, is yet far from being fully understood, and offers a very promising field to the patient investigator.

NATURE OF SMUT OF CORN (MAIZE). *USTILAGO MÄIDIS*.

This fungus develops in the bracts and leaves that surround the female flower, in the neighboring leaves of the stem, and on the spike of the male flower. Under its growth the coverings of the pistil become greatly enlarged, abnormally broad, and flattened with longitudinal grooves, or narrow, thick, and long, with prominent, rounded, longitudinal ridges. The resulting enlargement varies from the size of a hazel-nut to that of the closed fist. The ovary also is invaded and hypertrophied, often to the size of a walnut, but always smaller than its diseased investments, and it may entirely disappear. The remnants of the ovule are usually found in the interior of the diseased mass. Its diseased integuments are at first white, later pink, and finally brownish or smoky. When the ear is affected the diseased flowers or seeds

are almost always grouped in the same circular zone and near the summit of the ear, while some have merely aborted, and the great majority of the flowers remain sound.

The fungous excrescences, when recent and still filled with juice, are made up of a structure of large cells with frequent interspaces and traversed by a few fibro-vascular bundles. The large cells and interspaces are alike filled with the substance of the fungus, a colorless, jelly-like material, only slightly stained with iodine. Here and there in this material are the round or oval forming spores, which acquire a deep brown or yellow color on the addition of iodine, and around which the gelatinous mass comes to arrange itself in polyhedral masses. At a more advanced stage the center of a diseased mass shows a network of black lines formed by the confluence of the smutty spaces, while around the margin there remains the original colorless structure gorged with juice. When mature the diseased mass is filled with black spores, each covered with spikes like a chestnut burr.

USTILAGO CARBO. SMUT OF BARLEY AND OATS.

This also attacks wheat but to a less extent. It grows on the substance of the glumes and spike, causing entire abortion of the flowers on wheat and oats, but leaving traces of them in barley. Finally there is left merely a ball containing the black spores, which in this species are perfectly round and smooth.

TILLETIA CRIES—UREDIO CRIES—USTILAGO CRIES— SMUT OF WHEAT.

This fungus grows in the interior of the ovary only of wheat and some other grains, and when mature has not materially altered the size of the seed, but has imparted to it a brownish color, and three additional longitudinal grooves, one on the back and one on each side. When mature, it has a very thin envelope inclosing in a delicate fibrous net-work a mass of black spores, each with a finely reticulated surface.

The conditions that favor the production of these are in the main the same—the presence of the spores, a damp soil, a shady locality (the presence of trees and woods), the absence of free circulation of air, a moist air, a clouded sky, hot weather,

frequent thunder-storms, heavy rainfalls, and extreme changes of temperature, are especially noteworthy. Newly broken-up land, rich in decomposing vegetable matter, and land that has been overmanured favor their growth. Dr. Voelcker attaches great importance to an excess of nitrogenous matter in the soil, and Dr. J. B. Lawes to a relative deficiency of mineral matter, both of which conditions favor a growth deficient in stamina, even if luxuriant.

TREATMENT OF ERGOTISM.

This can only be satisfactory in the mildest cases and in the early stages. When warmth, sensibility, and circulation have left the extremities, recovery can only occur after they have separated. If circulation and nutrition have been permanently arrested in a circumscribed part of the brain or spinal cord, it may still be possible to preserve life, but this is liable to be incurable paralysis.

In mild and recent cases the treatment may be summed up in this: Make a thorough change from the ergoted or smutty fodder to a more wholesome diet, and preferably to one largely made up of succulent vegetables in a sound condition (turnips, beets, carrots, pumpkins, potatoes, apples, grass, ensilage, &c.); remove by purgatives any remaining ergot in the stomach and bowels; solicit by the use of abundance of diluents (daily liberal salting and free access to water at all times) and by diuretics (sweet spirits of niter, digitalis, or iodide or nitrate of potassa) the elimination from the blood and tissues of the active principles of the ergot; rouse by stimulants and tonics (ammonia, valerian, capsicum, angelica, musk or alcohol and gentian) the failing vital and circulating power; and oppose the contraction of the capillary vessels by such antagonistic agents as nitrite of amyle, chloral hydrate, chloroform, or opium. Locally, cleansing of the affected feet and the application of poultices containing a little camphor would be indicated. In cases where there is as yet no indication of gangrene, but merely a raw sore between the hoofs, a local stimulant like wood tar, with or without a few drops of sulphuric acid, will greatly favor a healthy reaction. Similarly, if the disease is confined to the sole of the foot without leading to shedding of the hoof, but merely to turning up of the toe or to lame-

ness, with creaking of the detached horn, this horn may be pared off, its edges thinned in a slopping manner on to the adjacent healthy horn, and the exposed secreting surface may be dressed with the tar and acid mixture referred to above. Sores in the mouth may be treated with borax or a solution of one part of carbolic acid in fifty parts water.

PREVENTION OF ERGOTISM.

The first object should be the avoidance of ergoted hay or smutty corn or cornstalks. Above all is this important in the case of cattle, which exercise so little care in the rejection of the faulty fodder. Experience shows that sheep and pigs will reject what will be greedily devoured by cattle; hence, the same hay which proves injurious to the latter may often be safely fed to the former.

Meadows in which ergot is abundant should be cut before any of the grasses have run to seed. The ergot only develops in the ovary or pistil, and therefore it cannot even start its growth until the grasses come into flower. Grass or hay that has been cut at or before the stage of flowering is safe to feed.

In the same manner pastures subject to ergot may be rendered safe by keeping them always eaten down so that none of the grasses can run to seed. If during a growing season any part of the field rejected by the stock threatens to run to seed, it should be at once cut down with a mower, before the seed has had time to form.

The most dangerous time appears to be the period between the formation of the soft, milky seed and its full ripening. Fully ripened grasses, therefore, with an equal amount of ergot, are somewhat less deleterious than that which has run to seed but is as yet immature. Unfortunately, this is usually more than counterbalanced by the extra growth and abundance of the ergot in grasses that have ripened fully before they were cut.

Where ergoted hay must be eaten, its evil effects may be largely obviated by feeding it with an abundance of succulent vegetables, such as turnips, carrots, beets, potatoes, pumpkins, apples, and the like, the excess of water as well as the relaxing constituents of which serving to counteract its effects. Thus

although ergot is common in much of the hay in the west of England, yet with the abundance of turnips fed in winter dry gangrene is unknown. The same is true of Belgium and other parts of the European continent where agriculture is advanced, and ergotism, which was formerly widely spread, is now confined to such backward districts as Sologne, where the marshy, unimproved soil maintains also the sister scourge of anthrax. In Lower Canada, too, where roots are largely grown, dry gangrene is much less common than in Ontario and our Northern States. In man, it is testified by Eckmann and Hojer, of Stockholm, that the addition of potatoes to a diet into which ergoted flour largely entered at once abated the evil effects of the latter. In the Alps of Bellona, too, ergotism (pellagra) disappeared as a disease of man on the introduction of potatoes as a staple article of diet. (Vallenzosea della Fallcadina. Balardini.)

The value of an abundant ingestion of water as a palliative or preventive cannot well be overestimated. Much of the good effects of the succulent vegetables is due to their aqueous constituents, and ergotism rarely attains to a serious prevalence until the water supply is restricted by freezing, or the consumption of water by cold weather. Hence the preparation of the ergoted hay in a wet condition (steamed, scalded, boiled, fermented) is to a certain extent palliative of its evil effects. For the same reason an abundant daily supply of salt, which will tempt the animal to drink freely, will prove in some measure protective.

Making ensilage of the grass in place of curing it dry has the double advantage of securing the product before it has run to seed, or ergot, and of feeding it in a moist condition, counteracting the effect of any ergot that may be present.

In the case of well-ripened hay the danger may be largely got rid of by passing it through a threshing machine. The seed and ergot having been both removed, the hay may be safely fed to stock. Such seed is unfit to sow, but may be fed in small quantity if boiled, or after boiling will make good manure.

To avoid the production of smut from spores sown with grain it is customary in Scotland to "pickle" the seed before putting it in the ground. This is done by sprinkling it freely with a

saturated solution of sulphate of copper, while it is being turned over with shovels, and afterward drying it by sifting into it freshly burned quicklime as it is being turned over a second time.

When the soil has become thoroughly impregnated with ergot or smut, the only course to be pursued is to tear it up with the plow and raise a succession of root crops, potatoes, buckwheat, &c., which do not harbor the fungus, and which require a great deal of cultivation and exposure of soil to the air.

Land that is habitually wet will be benefited by thorough drainage; that which is shaded by trees will be improved by removing them and letting in the air and sunshine, while worn-out soils may have an application of fertilizers. In this way the conditions favoring the growth of ergot may be in a measure removed and the more vigorous plants will be better able to maintain a healthy growth. The evil, however, doubtless comes from a few days with cloudy, damp weather occurring at the period of flowering of the grass, and where the spore of the ergot is present, the best conditions of life which careful culture can secure for the plant will fail to secure immunity from the scourge, and the watchful stock-owner must fall back upon such measures of early mowing, etc., as will best secure the animals against the evil. It should be added that the more vigorous the plant and the more quickly it passes through the susceptible stage of its growth the less opportunity has the fungus for taking possession of the flower at the critical moment.

Finally; a liberal dietary and a vigorous animal system will guard somewhat against ergotism. The more liberal and varied the diet the more will the animal be disposed to reject such food as is not specially appetizing, thus diminishing the ingestion of the ergot and increasing that of the more wholesome diet which will counterbalance and counteract it. Similarly the animal system which is plethoric or rather bordering on plethora has a more active nutrition and less readily submits to any noxious contraction of its overfilled vessels under the action of cold, ergot, or any chemical astringent.

SUGGESTIONS FOR INVESTIGATION.

So much yet remains to be learned of the action of fungi on

3d. Ascertain the difference of its action as grown in the various gramineæ subject to its attacks.

4th. In cases where the ergot is largely present and physiologically active, ascertain if any inimical qualities attach to the stems (hay, straw) apart from the diseased seeds and ergot.

5th. Ascertain the effect of soils on its growth and activity:

a. Damp and dry.

b. Porous and impervious.

c. With open and impervious subsoil.

d. Deep and shallow.

e. Rich in organic matter, and deficient.

f. Rich in nitrogen, and deficient.

g. Rich in the mineral constituents of the grasses, and deficient.

h. If long in cultivation; heavily manured and the opposite.

i. If newly broken; after timber and after prairie.

6th. Ascertain how the activity is affected by the different modes of curing the fodder.

7th. Make similar experimental investigations in the case of each of the other fungi that attack cultivated fodders.

8th. In the case of the lower species of fungi, the effect of the interstitial, and intravenous injection of the micrococci should be determined.

These inquiries are not suggested that they may be at once undertaken by the National Government, which has much more important and more urgent duties in the *stamping out* of exotic and other animal plagues which are not limited, like ergotism, to particular districts, but threaten the whole nation indiscriminately. They may, however, be taken up by others; or at some future time, when the true plagues have been effectually dealt with, the general interests of agriculture and sanitation may be consulted by some such investigation into the pathogenic bearings of the parasitic fungi of grains and fodders.

CROTALISM.A NEW DISEASE AMONG HORSES—RESULTS OF INVESTIGATION
MADE AT THE VETERINARY COLLEGE AT AMES.BY PROF. M. STALKER, M.D., V.S.

AMES, Sept. 24th.—*Special to the State Register.*—Some two months since repeated calls began to be made on my office through letters from various localities between Council Bluffs and Sioux City, for information concerning a highly fatal form of disease prevailing among the horses. These letters came from towns in Iowa, Nebraska and Dakota, but in every instance from locations in the Missouri valley. I went out in answer to these calls and soon learned that the situation was one of sufficient gravity to justify alarm. After visiting a number of towns along the line of the Sioux City & Pacific Railway, and making long excursions into the country, I gathered sufficient history to justify the estimate of fatal cases at several hundred.

The disease had been known in this region for three or four years, but had not until the present summer prevailed to such an extent as to attract general public attention. But now the loss in horse stock on some farms was not to be counted by hundreds, but by thousands of dollars. The disease proved to be one that had not hitherto come within the range of my experience nor had I any information of anything exactly identical with it. I spent several days among the farmers on the Iowa side of the Missouri river, taking careful notes of the symptoms, and gathering the history of the progress of the disease. On some farms I found almost all the horses affected, and on others but a few individuals. Deaths were an almost daily occurrence, and the farmer who owned a large stock of horses did not know to-day whether he would have teams for his farm work a week later. The disease in most cases is very slow in its progress, but proving almost uniformly fatal after a number of weeks or months. There is a general decline of bodily vigor throughout this period, and the only abnormal symptom in many cases is that of marked emaciation and consequent weakness. Horses that have been kept at pasture through the summer, without work, and where the

grass grew in the greatest abundance, were so thin in flesh that they walked with the greatest difficulty. A critical examination of many of these patients revealed nothing more than the conditions resulting from starvation. This was not uniformly the case. In a number of instances there was marked coma or stupor, the animal often falling asleep while eating. In some instances the animals would remain standing for a whole week, sleeping much of the time with head resting against some object. In a few instances the animals were placed at my disposal, and assisted by Dr. Fairchild and Dr. Milnes I made post mortem examinations of five subjects with the most perfect uniformity as to the lesions presented. In every instance there was marked hæmorrhagic effusions into the fourth ventricle, the liver and spleen were abnormally dense, the walls of the intestines were almost destitute of blood, and the stomach enormously distended with undigested food. The stomach with its contents in some instances, weighed as much as seventy pounds. These post mortem conditions, together with the clinical symptoms, led me to believe the animals were obtaining some poisonous principle with their food. The symptoms in some cases bore such a resemblance to those produced by eating *Astragalus Mollississimus*, or loco plant of the Western plains, as to direct my investigations to that family of plants. A careful examination of the meadow and pasture lands was not rewarded by the discovery of a single loco plant.

It took but little investigation, however, to find a closely related plant growing in great abundance, both in the meadows and pasture. This was the *Crotalaria Sagettalis*, or rattle box. This is also known as the wild pea, and is accounted by many farmers as the best of forage plants. Knowing the bad reputation of some of its near relatives I determined to make some experimental tests with the plant. I employed a boy to collect about thirty pounds of the green plants, which I brought with me on my return to the college. I procured a strong young horse, affected with incurable catarrh, and attempted to induce him to eat the plant. This he persistently refused to do, though I sharpened his appetite by a protracted fast. It is a matter of common observation that animals eat it with the greatest relish in localities where it grows. Fail-

ing to induce the animal to take the plant voluntarily I prepared a strong infusion, and by means of the stomach pump gave the preparation obtained from about ten pounds of the plant. In twenty minutes stupor began to ensue, the eyes were closed, the head was rested against the side of the box, the breathing became stertorous, and all the symptoms developed that were to be seen in the patients previously examined. At the end of six hours the stupor began to disappear, the eye began to regain its brightness and in another hour the horse began to eat. The following day, when he had apparently recovered from its effects, he was given half the quantity of the drug as on the previous day. In this instance the symptoms were developed much more rapidly, the animal becoming unconscious in a short time and died in an hour and a half. The post mortem revealed the same condition of the brain as in the case examined in the western part of the State. I now resolved to make a second experiment, in which the animal should receive a small quantity for a number of days in succession. Having procured another subject for experimentation and a bushel of the mature fruit, or pods of the plant, I commenced on Sept. 5th to give daily the infusion obtained from about one quart of the pods. On the fifth day of the experiment the characteristic stupor came on. The animal rested its head against the box and slept while standing. The symptoms grew more marked till the thirtieth day of the experiment, when the animal died. The post mortem showed the same as in the other cases. These experiments leave no doubt in my mind that the trouble along the Missouri river is occasioned by the animals feeding on this little plant. It is from eight inches to a foot in height, with branching stems bearing yellow flowers in July and developing large pods resembling the pea, but containing a number of black, hard seeds. It grows on sandy bottom land, and is very abundant in the meadows and pastures in portions of the Missouri bottom. It is seldom seen among the tame meadow grass in any considerable amount. It thrives best among the wild grasses. Animals, doubtless, eat it much more than formerly, when the wild pasturage was better than at present. Cattle sometimes, though not often, suffer in the same way as horses.

The first question the farmer is likely to ask, is : "What shall we do?" You cannot rely on drugs to cure the disease. You must prevent its appearance. Feed wild hay free from the poisonous plant, tame hay, corn fodder, sheaf oats, straw, anything but the wild pea. Plow up the land and put it in tame grass. The wild rye, which is taking much of the bottom land, is aggravating the disorder brought on by the rattle box. By the proper cultivation you will get rid of both at once. Animals placed on good green pasture, or supplied with other nutritive food, free from the poison, will doubtless make slow recovery. Two ounces of epsom salts, with two drachms of sulphate of iron and one drachm of nux vomica daily will tend to restore the tone of the system and promote digestion.

Prof. Bessy, in the forthcoming college bulletin, which will be published about the first of November, will give a full description of this plant, together with accurate plates.

ARE FURTHER EXPERIMENTS NECESSARY?

DR. SALMON REPLIES TO THE CHICAGO CATTLE BROKERS.

Elmer Washburn, Esq., President of Chicago Live-Stock Exchange.

SIR—Your letter to the Hon. Geo. B. Loring, Commissioner of Agriculture, with accompanying resolutions adopted by the Chicago Live-Stock Exchange, have been referred to me for such action as I may deem proper under the circumstances. The material portion of these resolutions appears to be contained in the following words :

"WHEREAS, It has been declared recently by agents of the Department of Agriculture that contagious pleuro-pneumonia now exists to an alarming extent in the State of Illinois; * * * and whereas, apparently well-authenticated reports of the * * * existence of all the contagious diseases with which cattle are ever afflicted have been frequent for many years, and as often found to be utterly without foundation in fact, * * * therefore, * * for the purpose of determining beyond question whether or not the disease now declared * * to exist * * in the State of Illinois is con-

tagious, the Chicago Live-Stock Exchange hereby places at the disposal of the Hon. Geo. B. Loring, Commissioner of Agriculture, ten head of cattle, * * * to be placed among any cattle in the State of Illinois which the honorable Commissioner may be declared to be afflicted with contagious pleuro-pneumonia, and allowed to run and feed with the cattle so diseased, in the same manner as cattle run and feed together on the farm, for the period of three months," etc. The entire expenses to be defrayed by the Chicago Live-Stock Exchange.

These resolutions assume, consequently, that there are two points in the reports of the officers of the Department of Agriculture which are so improbable and so questionable that experiments involving the loss of three months' time in the efforts to control the disease should be made before a definite conclusion is reached, or a decided course of action adopted. These contested points are: 1st. Does a disease exist on the premises and to the extent reported? 2d. Is this disease contagious pleuro-pneumonia?

The first question needs no experiments to decide it. It is a matter of fact which any person or any association can easily determine by visiting the affected herds, or even communicating by letter with the owners. Nothing has been concealed in the reports that have been made. The owner's name, his location, the number of animals he has lost and the number that have been sick have been published again and again, and these reports are readily susceptible of verification or disproof. Surely the testimony of such men as Mr. O. J. Bailey or Mr. D. H. Tripp, of Peoria, or Mr. John Boyd, of Elmhurst, as to the condition of their herds, especially when this testimony is unfavorable to themselves, cannot be called in question. I have before me as I write a letter from one of these gentlemen, in which he says: "I am fully realizing in my herd your worst fears." It seems to me, therefore, that the implied suggestion that the reports of this disease were "utterly without foundation in fact" was made without reason, and is unworthy of further consideration.

Admitting, as a fact which cannot be successfully contested, that a disease exists at the places and to the extent reported, we may take into consideration the second question which you have

raised, viz., is this disease contagious pleuro-pneumonia. In this connection I would respectfully invite your attention to the following facts :

At the first post-mortem examination which I made in this State, at Elmhurst, I invited Mr. J. H. Sanders, member of the late Treasury Cattle Commission, who enjoys the respect and confidence of the great body of cattle-owners of the country, and who is familiar with the appearance of the lungs of cattle affected with contagious pleuro-pneumonia. At the second autopsy were present Dr. N. H. Paaren, State Veterinarian, and Dr. J. H. Rauch, secretary of the State Board of Health, gentlemen eminently qualified for deciding as to the nature of the disease. At my third examination, which occurred in a herd in the State of Ohio to which was traced the outbreak in this State, was present Captain Wm. S. Foster, President of the Ohio State Board of Agriculture. Seven animals were killed at that time, every one of which showed the unmistakable signs of pleuro-pneumonia. At various examinations made by Dr. Paaren in the State of Illinois have been present Prof. Smith, principal of the Toronto Veterinary College, Dr. Holcombe, State Veterinarian of Kansas, and other veterinarians of standing. These gentlemen have without an exception expressed a decided opinion that the disease is contagious pleuro-pneumonia. Dr. Haggard, of Kentucky, an English veterinarian who had heretofore expressed himself to me as skeptical of the existence of contagious pleuro-pneumonia in the United States, was called a few days ago to decide as to the nature of the disease introduced into the herd of Frisbie & Lake, of Cynthiana, Ky., by the cattle from Clarke's herd, of Geneva, Ill. After slaughtering a diseased animal and making a thorough examination he unhesitatingly pronounced the disease identical with the contagious pleuro-pneumonia that he had been familiar with in England thirty years ago. It is a fact, therefore, that the disease in question has been seen by a considerable number of good authorities and that none of these have expressed a doubt of its being pleuro-pneumonia.

In addition to this the owners of most of the affected herds have seen the post-mortem examinations of their animals and can

testify that they died of disease of the lungs, that these organs were greatly enlarged, inflamed and firmly attached to the ribs and diaphragm. There is, consequently, plenty of good evidence that the animals have been sick and have died, and that in all cases there was inflammation of the lungs and pleura, in other words, pleuro-pneumonia.

It is admitted of course that in rare instances a disease is met with in individual animals which may have many of the appearances seen in contagious pleuro-pneumonia; but such cases appear singly, and the disease is not communicated to other animals of the herd, and for the same reason not to other herds. The most conclusive evidence of the contagiousness of pleuro-pneumonia is, consequently, its communicability. I beg to present to you in this connection, therefore, and through you to the members of the Chicago Live-Stock Exchange, the following history of the present outbreak of disease, any and every fact of which I invite you to inquire into and substantiate for your own satisfaction.

In November, 1883, C. R. C. Dye bought a number of unregistered Jersey cattle, which were gathered up in the vicinity of Baltimore and taken to his farm at Troy, O., where his herd was exposed to them. About the 1st of February, 1884, his fine bull Rayon d'Or sickened with symptoms of acute lung disease and died in March. He was examined and found affected with pleuro-pneumonia. Other animals to the number of eighteen afterwards contracted the disease, and seven in all died or were killed by him. September 18th I selected seven of the animals which had been sick and still presented signs of the disease and slaughtered them. Every one was plainly affected with pleuro-pneumonia. We may call this experiment No. 1.

In February, 1884, C. N. Mitchell, of Dayton, O., purchased three heifers of Mr. Dye and placed them with his herd of about thirty animals. As a result seven have died of pleuro-pneumonia and five show plain indications of the same disease. This is experiment No. 2.

Experiment No. 3 was made by A. G. Epler, of Virginia, Ill., who purchased five animals from Dye in January and placed them among the lot sold by him on the 21st of February. Of

these animals one bought by Mr. Bevis, of Virginia, died; one bought by Porte Yates, of Springfield, died—both of pleuro-pneumonia. A cow brought on Mr. Elpher's farm died of the same disease in June. Another, sold to F. L. Gaston, of Normal, died with suspicious symptoms the 20th of April. Another, purchased by D. W. Rawlings, was sick with symptoms of lung disease. Still another, purchased by M. G. Clarke, of Geneva, Ill., was sick in April, and one that went to J. B. Warlow, of Danvers, Ill., and two that went to Lilly, of Sharon, Ia., died of an unknown disease. Following the introduction of the Dye cattle into this herd then there were seven deaths, three of which certainly were of pleuro-pneumonia. Two cases of sickness with lung disease not ending in death are mentioned above. A third case occurred before the sale; the animal was sold as not fully recovered, is now owned by W. F. Whitson, of Rushville, Ill., and presents plain symptoms of pleuro-pneumonia. A fourth was affected after going to Tripp's, at Peoria. Total, eleven cases.

D. W. Rawlins placed his cow in pasture with a Short-horn cow, which in turn contracted what was evidently lung disease. She has since been slaughtered. Experiment No. 4.

D. H. and S. S. Tripp, of Peoria, purchased three cows at the Epler sale, and this may very properly be called experiment No. 5. One of these afterwards sickened and infected his herd, from which he has lost five, and had an additional one sick at last accounts which he intended to kill.

The disease was carried in some way—probably by persons going from one stable to the other—to Mr. O. J. Bailey's herd, and here we have experiment No. 6. Mr. Bailey had lost five at last accounts. In neither of the above herds is the experiment yet finished.

Experiment No. 7 occurred when W. C. Clarke, of Geneva, took two cows from the Epler sale into his herd. As a result seven head have died, or were killed by him, affected with pleuro-pneumonia, and Dr. Paaren killed two more for the same disease September 24th.

We may refer to the purchase of two cows from Clarke by

C. A. Keefer, of Sterling, Ill., as experiment No. 8. One of these cows died of pleuro-pneumonia and the other has since been killed because affected with the same disease.

Experiment No. 9 was made by John Boyd when he brought two cows from Clarke's infected herd among his beautiful Jerseys at Elmhurst. The record here is fourteen that have died or been killed showing symptoms and post-mortem appearances of contagious pleuro-pneumonia. Twenty-one cows in this herd were exposed, twelve of which, or about 60 per cent., have already contracted the disease; and this in addition to the two that were purchased, both of which were affected.

Experiment No. 10 was Frisbie & Lake's purchase of fifteen head from Clarke's infected farm. These animals were pastured with the 250 which constitute their herd at Cynthiana, Ky. The results so far may be summed up as four dead and ten or twelve sick, with others coming down with the disease almost daily.

Messrs. Frisbie & Lake did not believe in pleuro-pneumonia; they intended to protect their herd to the fullest extent of the law against the supposed sensational reports of interested veterinarians, and they engaged one of the best lawyers in the State to defend them. Probably they accepted the view so industriously circulated in certain quarters that this is a disease of Jerseys and that their grades, at least, would certainly escape. Fortunately just as their case was prepared they decided to have a post-mortem examination made of a sick cow. The result was very well expressed to me by Judge West, their counsel, when he said that the finest legal effort of his life was ruined by that examination.

I have referred above to ten experiments with this disease, involuntary it is true, but experiments nevertheless, seven of which are on a larger scale than is proposed by the Live-Stock Exchange, and are just as conclusive as the experiment which they propose could be. More than six hundred animals, in all, have been exposed and ninety cases of pleuro-pneumonia have so far resulted, in spite of vigorous efforts to arrest the disease. A large number of these animals have been examined after death, and in every one of these has been found the characteristic appearance of the lungs described the world over as peculiar to

lung plague. In three of the large herds the outbreak is still in progress. In by far the largest herd it has only just commenced, and in two others there will probably be additional cases.

As a matter of fact, therefore, the test of communicability has already been made on a scale compared to which the little experiment proposed by the Live-Stock Exchange sinks into insignificance. After six hundred animals have been exposed and ninety have become affected, the infection in every instance being traceable to one original herd, it appears somewhat ridiculous to be asked to leave all of these cases out of consideration and to rely entirely upon the results which follow from the exposure of ten animals. Can there be any doubt that persons dissatisfied with a test on so grand a scale would be equally unwilling to accept the results with an additional ten animals, even if all succumbed?

An experiment of the kind you propose would require at least three months to produce definite results, and it might be four or five months before a sufficient proportion of the animals were attacked to furnish satisfactory proofs of contagion. By that time we hope to have the West freed from every vestige of the disease, and this will almost certainly be accomplished in Illinois by the slaughter of all affected animals. It is difficult to see what bearing such an experiment would have, therefore, on our course with the present outbreak. Pleuro-pneumonia is a most dangerous disease, which once distributed widely over the country would almost defy our most vigorous efforts to control it. It has already been considerably scattered, and but for the prompt action taken to suppress sales, it would probably be to-day in double the present number of herds. To relax our grasp upon it now, and turn our attention to a course of experiments requiring months of valuable time, might be compared to firemen who could be persuaded to stop fighting the flames and apply the torch to other inflammable structures to learn by experiment whether or not they would burn.

Pleuro-pneumonia is not an unknown disease or one of recent origin; on the other hand, it was studied and described by the earliest authors who wrote intelligently of animal diseases. Its

characteristics are well known, and there is little danger of a competent veterinarian mistaking it even when he sees but one or two isolated cases; and when such cases are multiplied as they now are there is no longer reason for the slightest suspicion that an error has been made. When I say this I refer, of course, to professional men who know something of diseases and the means of distinguishing between them; those who are without this knowledge have no more right to say that the veterinarian cannot diagnose such a disease when he sees it than the hod-carrier would have to say that the chemist cannot distinguish between iron and lead in solution by the reagents on his shelves.

I desire to remind you, in this connection, that the official reports of a responsible officer of the government, selected because of supposed competency in the work upon which he is engaged, cannot be justly compared with the idle rumors started by irresponsible men to which the resolutions refer. In the present instance the importance of correct conclusions was so thoroughly appreciated that the Chief of the Bureau of Animal Industry left very pressing duties at Washington, and has given this outbreak of disease his personal attention and investigation from the beginning. For six weeks the greater parts of his nights have been passed on railroad trains, traveling from place to place, and his days have been given to the laborious work of catching and examining cattle on the pastures of this and adjoining States, and he feels that, whatever may be the opinion of the Live-Stock Exchange, he has done his duty and all that was within his power to protect the enormous cattle interests of the country from an insidious plague that threatens their destruction.

In what precedes I have endeavored to show that the proposed experiment is unnecessary and uncalled for. Had it been considered necessary or even desirable to make such a test the Bureau of Animal Industry would not have hesitated to use the ample funds placed at its disposal by Congress for making such investigations. The insurmountable objection to such an experiment, however, consists in its danger to the cattle industry and the loss which it would bring upon it. Every case of pleuropneumonia in the heart of the stock-raising region of the country

involves danger to the surrounding animals and causes a feeling of insecurity among owners and buyers which interferes with the movement of cattle, weakens the market, depresses prices and causes a loss to breeders and feeders which soon amounts to millions of dollars. That this danger might be removed and this loss lessened, affected animals have been slaughtered as soon as possible and the progress of the disease has been checked, if not entirely stopped. To change this course and to allow animals suffering from this dangerous disease to live and graze on the pastures of Illinois as you propose, to go beyond this and deliberately set ourselves about propagating this scourge in the very heart of the stock-growing region of America—to follow such a course for three or four months and in the meantime to allow the plague to gather renewed headway in other localities would be idiotic and inexcusable. A well-known cattleman said to me a few days ago that it would be criminal, and I fully coincide in his opinion.

There are other parts of the country where these objections do not apply, and there we have been for months testing the contagiousness of this disease and shall impartially report the results.

I hope that you will see in the facts presented above a sufficient reason why I should decline the proposition of the Chicago Live-Stock Exchange.

EDITORIAL.

CONTAGIOUS PLEURO-PNEUMONIA IN THE WEST.

The appearance of contagious pleuro-pneumonia in the West has, naturally, excited deep and wide-spread anxiety among the parties engaged in the cattle-raising interest. A large number of animals have already been destroyed, and possibly it may become necessary to add many more to the list of the condemned. The Chief of the Bureau of Animal Industry has, so far, fully appreciated the importance of the work in hand, and the gravity of the calamity he has had to confront and overcome, and if he

escapes certain peculiar interferences and objections, and insurmountable obstacles are not put in his way; and if he receives the assistance and countenance to which he is entitled from the people, and from the membership of his profession, he may yet achieve a substantial success. Is this, however, to be the case? Will the true character of the disease become fairly understood and admitted by all? If we may judge from reports which we gather from some of the agricultural journals, it seems more than probable that there will be rebellion and opposition against the measures he has adopted, and that he will not always find the people as willing to pronounce a favorable judgment upon his work as it has at other times received.

To a proposition, coming from the Chicago Live-Stock Exchange, to test the question of the infectious nature of the disease now prevailing in Illinois, Dr. Salmon replied in a long letter, which we publish to-day, not only because it gives the true history of the outbreak, but also because it shows the uselessness, in the opinion of that gentleman, of entering upon new experiments of the kind suggested. No one who is thoroughly acquainted with the disease, and who has followed the reports of its outbreak and progress in the West, can fail to agree with Dr. S. No further experiments are needed, and to resort to them now would be to a great extent a practical acknowledgment of previous error on the part of any veterinarian who should consent to lend the self-stultification of such an act. For this reason, the experiment which it has been proposed to undertake in the East, at Barren Island, must be stopped. If it is allowed to proceed, people may reasonably ask to be enlightened as to the necessity of accepting one and repudiating the other, and the only plausible answer the question will admit will be that the disease of the East, which we have been recognizing as pleuropneumonia, is an entirely different one from that which exists in the West.

We are also in fear lest Dr. Salmon should ere long encounter objections which may prove still more formidable than these, and which will not derive their importance from their own intrinsic soundness, but rather because they will have originated within

the ranks of the veterinary profession. We must be allowed to remind him of the Blissville affair, occurring some years ago, and of the Brooklyn cases which transpired recently. The fact that there are veterinarians who deny the existence of contagious pleuro-pneumonia in the East, in the very center of its bed growth, and who will, in all probability, succeed in impressing their views widely at the West, will, we fear, become the source of not a little annoyance to him, and may become the source of a serious and active opposition which may be brought to bear upon his efforts to stamp out the disease in the West.

OUR REGISTER OF REGULAR GRADUATES.

Our recent call to veterinarians and to our readers to second our efforts to obtain the proper material for the construction of a register of the regular graduates of veterinary medicine in this country has elicited many replies, expressing approval of the object proposed, and accompanied by many names which might otherwise have been difficult to obtain. The result is that we have been able to present to our readers and the public the names of a large number of veterinarians holding their diplomas from the veterinary schools of the United States and of Canada. In our present number we give the concluding portion of the catalogue, being lists of the Alumni of the New York College of Surgeons previous to 1875, and of Cornell University, with the names of graduates of European schools as far as we have been able to collect them.

While we feel confident that our list of American graduates is as complete and correct as it is now possible to make it, we fear that those of the veterinarians of European schools is by no means perfect, and as we feel bound to render them equal justice with the others, we take this last opportunity to call upon our friends to furnish us with the names of all persons who may be known by them to possess a right to a place in the register. The names, places, and if possible the years of graduation, are the facts we need to enable us to complete our list.

Proper corrections will be made of any omissions or inaccuracies discovered and indicated to us.

REGISTER OF GRADUATES OF VETERINARY MEDICINE.

Continued from page 311.

ALUMNI OF THE VETERINARY DEPARTMENT OF CORNELL UNIVERSITY.

Farrington, A. M.....	Garfield, N. J.
Kasson, N.....	Springville, Pa.
Salmon, D. E.....	Washington, D. C.

ALUMNI OF THE NEW YORK COLLEGE OF VETERINARY SURGEONS.

Bell, L. I.....	1871
Blakely, Richard P.....	1875
Burden, Charles.....	1868
Cosgrove, John B.....	1875
Dougherty, William.....	1874
Fernsler, Philip B.....	1874
Finlay, Robert W.....	1873
Hopkins, James D.....	1873
Herr, Benjamin H.....	1874
Michener, Charles B.....	1874
Meyer, John C., Jr.....	1874
Nostrand, Elbert.....	1867
*Nostrand, Peter.....	1871
Outerbridge, Theodore.....	1875
Peters, Peter.....	1873
Robertson, James L.....	1867
*Stocker, Charles H.....	1874
*Travers, Ernest.....	1875

*Deceased.

ALUMNI OF THE ROYAL COLLEGE OF VETERINARY SURGEONS. (England.)

Taken from the Register of 1882.

Barr, Alexander.....	1874
Beech, T. Simpson.....	California.....1835
Bolton, Geo. Frederick.....	Montreal.....1864
Bushman, Joseph Thomas.....	Washington, D. C.....1862
Carmody.....	New York.....
Casewell, John.....	California.....1871
Clark, John.....1854
Clemenson, John.....	Allegheny City.....1843
Coleman, J. B.....1869
Coster, L. H.....1870
Frater, W.....1830
Frazer, J. I.....	Rochester, N. Y.....1876
Gadsden, J. W.....	Philadelphia, Pa.....1858
Grayson, J.....	Pennsylvania.....1845
Haggard, E.....1839
Heard, J. M.....	New York.....1871
Hingston, J. C.....	Bay City, Mich.....1877

Hoey, J. W.....	— —	1840
Howell, H.....	Massachusetts.....	1870
Hulme, T. D.....	— —	1863
Jay, D.....	Davenport, Iowa.....	1866
Laidlaw, R.....	Albany, N. Y.....	1840
Large, A. Prof.....	Great Barrington, Mass.....	1861
Law, James, Prof.....	Ithaca, N. Y.....	1861
Lander.....	— —	1830
Leverett, C. R.....	United States Army.	1871
Lillyman, W. H.....	Boston, Mass.....	1840
Lockhart, A.....	New York City.....	1865
Loudon, A.....	Boston, Mass.....	1869
Lyman, C. P.....	Boston, Mass.....	1874-'79
McEachran, D., Prof.....	Montreal, Canada.....	1860
McDonald, J. G.....	— —	1844
McInnes, B., Jr.....	Charleston, S. C.....	1874-'80
McLean, L.....	Brooklyn, N. Y.....	1854-'80
Mellor A.....	Philadelphia, Pa.....	1872
Moore, E.....	Albany, N. Y.....	1877
Murray, A.....	Detroit, Mich.....	1862
Ogden, C. E.....	United States Army.....	1873
Osgood, F. H.....	Springfield, Mass.....	1881
Perry, E. M.....	New Bedford, Mass.....	1878
Plageman, L. V.....	Brooklyn, N. Y.....	1863
Preston, F. W., Prof.....	Champaign, Ills.....	1869
Quickfall, J. K.....	— —	1858
Rice, F. A.....	Hartford, Conn.....	1881
Scally, G.....	St. Louis, Mo.....	1858
Shaw, Th.....	— —	1871
Simmons, W. F.....	Boston, Mass.....	1881
Smith, A., Prof.....	Toronto, Canada.....	1861
Stickney, J. H.....	Boston, Mass.....	1859
Talbot, B.....	New York.....	1864
Taylor, J. N.....	Utica, N. Y.....	1863
Treacy, M. J.....	Fort Totken, Dakota.....	
Vasey, N.....	Troy, N. Y.....	1872

ALUMNI OF THE FRENCH SCHOOLS.

Chambon, E. D. E.....	Jersey City, N. J.
Huidekoper, R. S., Prof.....	Philadelphia, Pa.
Klench.....	Canada
Liautard, A., Prof.....	New York City, N. Y.
Morice, J.....	New Orleans.

ALUMNI OF GERMAN SCHOOLS.

Billings, F. S.....	Boston, Mass.
Detmers.....	Champaign, Ills.
Meyers, J. C., Jr.....	Cincinnati, Ohio.

ILLNESS AND RECOVERY OF DR. FLEMING.

The *Veterinary Journal* of October, which excited our apprehensions with the painful intelligence of Dr. Fleming's illness, brings also an antidote to our anxiety in the gratifying announcement of his recovery. The veterinary profession at large will rejoice over the latter statement, and will join us in tendering to the doctor our hearty congratulations, with our sincere wishes for his complete restoration to a degree of health and vigor which shall insure a long continuance of the services he is so amply qualified to render to the public, and the honor his career is destined to reflect upon the cause of veterinary medicine.

A CORRECTION.

There appeared in the October number of the *Journal of Comparative Medicine* amongst the correspondence, a letter attacking our veracity in relation to the action that took place last March between the American and Columbia Veterinary Colleges. We intend to answer it, and to lay before the public and profession the facts as they exist, but the pressure resulting from more important matters has obliged us to postpone our reply until our next issue.

REPORTS OF CASES.

AMERICAN VETERINARY COLLEGE.—HOSPITAL RECORDS.

AMYLOID DEGENERATION OF THE LIVER—SOFTENING OF MUSCULAR COAT OF THE INTESTINES—COLICS—DEATH.

By J. E. RYDER, D.V.S., HOUSE SURGEON.

On the 29th of May I was called to examine a horse which had been taken ill on returning from a drive. He was a gelding, six years of age, and was found to be suffering with spasmodic colic. I gave him a seven drachms ball of chloral, which relieved him in a short time. He passed a quiet night, and was found the next morning apparently well and eating his bedding. Two days later he was driven about five miles, in the morning, and in

the evening had another attack of colic. This time the chloral failed to give him relief, and he was then placed under the administration of tinct. opii., $\bar{3}$ ss. every hour. Three hours later all the symptoms had subsided, and the next morning he was again found in usual apparent health. Supposing the trouble to be due to some irritating substances in the intestinal canal, possibly to hardened fœces, it was thought proper to give a good cathartic, and for that purpose he was prescribed a seven drachms dose of aloes. About 3 o'clock of the same day the colicky symptoms reappeared, more severely than before, and he was brought to the hospital of the college.

A more careful examination of his history brought out the fact that he was a valuable trotting horse; that he always had been narrow in his belly; that he was a fast eater, but that his appetite was very capricious; that he required to be coaxed to eat, especially after hard work, and that bran had to be given to him, mixed with his oats, to stimulate his appetite. He had shown no signs of constipation, and had passed his fœces in coming to the hospital, though rather of a diarrheal nature.

On admission his temperature was $101\frac{2}{3}$; pulse, 50; respiration, 40, and he had severe abdominal pains. Stimulating frictions were made to his abdomen, and he was placed under tincture opii in ounce doses every hour. Towards morning he became quiet, and the administration of the tinctura opii was reduced to every three hours.

He had passed no manure; temperature, $100\frac{1}{2}$; pulse, 44; respiration, 20. His general condition was good. Half a pint of linseed oil was administered, with directions to leave him alone and watch his condition, with administration of opiates if the case seemed to indicate it. On the following day his bowels began to move nicely. His condition was very favorable, and all treatment was suspended, careful attention being given to his diet, though his appetite was excellent.

Forty-eight hours afterwards, as he was about being discharged, he refused his food. His temperature suddenly rose to 104° , his pulse and respiration increased, and severe contractions of the diaphragm with thumping took place. This was controlled by aconite and opium.

On the following day his bowels moved very freely, purging well. His temperature kept up and his pulse rose to 125. Some colicky pains again showed themselves; he soon broke out into a profuse cold perspiration; his body became cold, and after a severe spasm of pain he fell and expired in a few minutes.

The post-mortem examination was made immediately and the following lesions were found: *Stomach*—Lesions of chronic gastritis, with a large, deep ulceration through the mucous coat, in the middle of the cardiac portion. *Intestines*—Slightly congested, with the muscular coat considerably softened, the softening process rendering the removal of the organ very difficult, from its tearing so readily under the slightest traction. The *Liver* was greatly enlarged. It weighed eighteen pounds, and had undergone waxy degeneration throughout its whole extent. The *Kidneys* were somewhat pale in color, but otherwise in a normal condition, as were indeed the remaining organs of the body.

PROGRESSIVE PARAPLEGIA—NECROSIS OF THE DORSAL VERTEBRÆ—DEATH.

BY F. ALLEN, D.V.S., HOUSE SURGEON.

The latter part of July there came under my observation, at a free clinic, a gray gelding, nine years of age.

This horse had been used as a cart horse for drawing manure. As he was led into the hospital he showed an unsteady gait, his body swaying from side to side, from an inability to control his hinder extremities.

His temperature, pulse and respiration were all normal, and his appetite good.

Careful inquiries were made in regard to the history of the case, but no facts of importance could be learned. It was thought at that time that the horse must have fallen and strained his back, or that he had been injured in some other way, but this was denied by the owner and also by the driver. As no lesion could be detected, he was placed under treatment, being governed by the symptoms presented. He was placed on nerve stimulants—*nux vomica*, in drachm doses with a little gentian and glycyrrhiza, three times a day. He was taken home, and as

we learned since, was worked about a week. He was again brought back on August 2d, showing no improvement, but being a little worse the dose of *nux vomica* was increased to a drachm and a half three times a day, with strict orders not to work him, but to keep him as quiet as possible.

On August 11th he was again returned, and was taken into the hospital, where he remained until destroyed. His gait was now very uncertain, and it was with great difficulty that he was made to walk to a stall. As he did so, he dragged his toes, crossed his legs, and the hinder portions of the body rolled from side to side, unless steadied by the tail.

The actual cautery was applied in straight lines over the whole back, and a severe blister applied to the sacral vertebræ, extending well forward. The animal was then put in slings and kept quiet, receiving for treatment sulphate of strychnia three times a day, beginning with half grain doses, and increasing it by degrees until he received nine grains a day. His appetite and all his functions were normal and in good working condition. Carefully watched, no change, however, was observed. When removed once from the slings and moved out of his stall he walked in the same irregular manner, as unsteady and as unconscious of where his feet were going to rest. He seemed to lose ground as to his strength, and after much pain, to prevent his falling, he was placed back in the slings, where he remained till the 27th.

On that day he was removed from his immobile position, and walked with care to a large box stall, situated on the second floor of the hospital. The journey was accomplished without very great difficulty, and he was then turned loose, with directions to be placed in slings at night. The strychnia was continued.

One day while moving about in the stall he fell down, but after lying for a few minutes he got up, though with great difficulty. He was seen several times in a sitting posture, like that of a dog. During all this time his appetite had been good, and he was eating nine quarts of oats a day with hay.

On the 30th of August he laid down about six o'clock, and it was with great difficulty that we were able to raise him to his feet by the use of slings.

At seven o'clock he gave out, settling back in the slings so that he nearly slipped out backwards. The slings were then removed, and he continued lying down. He was seen up but once after this, and then only for a few minutes. On the 1st of September he was thrashing about so that he was pithed late in the evening. At this time he had complete paralysis of both hind extremities.

On post-mortem examination nothing wrong was noticed until, while trying to exhibit the spinal marrow, we reached the seventh, eighth, ninth and tenth dorsal vertebræ of this region. A large clot of blood was found in the muscles, which were besides thickly infiltrated with blood in their entire thickness, the annular portion of these vertebræ being also more or less diseased. The seventh presented a small necrotic surface at the base of the posterior border of the superior spinous process. The annular portion and base of the spinous process were destroyed on the right side of the median line, the necrosis extending through the bone into the spinal column. On the ninth the necrosis was not quite so extensive. It appeared principally towards the transverse process, but there also were perforating the bone right through. The tenth presented only slight necrosis at the base of the transverse processes. The vertebral canal was filled with blood, and the spinal marrow too much softened to permit any examination.

All the other organs of the body were healthy.

ACUTE RHEUMATISM.

BY H. F. JAMES, V.S.

Was summoned October 5th, about 4 p. m., to attend a bay horse which had been exposed for some hours in the rain two days before, and was now reported to be very sore, and entirely off his feed. On examination found temperature 105°, pulse 75 and wiry, respiration 50 and very laborious. Fore legs, especially the knees, and the hind legs from the hocks down exquisitely tender to the touch and swollen. Diagnosis—acute rheumatism; prognosis—doubtful on account of the great respiratory disturbance, which indicated implication of the valves of the heart. Admin-

stered acid salicyl. \mathfrak{z} ss in bolus, and enough of the injectio quiniæ hypodermica to equal quinia sulph. \mathfrak{z} ij. Every two hours gave acid salicyl. \mathfrak{z} ij in bolus, and the hypodermica equivalent of quinia sulph \mathfrak{z} j. At 12 p.m. the nostrils were dilated, respiration 60 and very laborious, pulse intermittent, and a friction sound on auscultation behind left elbow. Applied a strong fly blister over this region, gave my patient acid salicyl. \mathfrak{z} vj., and a rousing stimulant, and left him for the night.

October 6th, 7 a.m.—Temperature 104° , pulse 60, breathing nearly natural. The rheumatic swellings had almost entirely subsided, and he could bear the pressure of my hands very comfortably on his hocks. Gave \mathfrak{z} ij doses of the acid and \mathfrak{z} j of quiniæ hypodermically every three hours during the day. 6 p.m.—Temperature $103\frac{1}{2}^{\circ}$, pulse 60.

October 7th, 7 a.m.—Temperature 103° , pulse 52, crackling in joints has nearly ceased, less clear and hard, no pain on pressure. Ceased the quiniæ, but gave \mathfrak{z} vj of the acid during the day.

October 8th, 7 a.m.—Temperature 102° , pulse 50. Gave same doses of the acid as yesterday. 6 p.m.—Temperature $100\frac{1}{2}^{\circ}$, pulse 45.

October 9th.—Temperature and pulse normal, no crackling of the joints, and walks as well as he ever did.

There had been complete anorexia from the first, which I think was partly due to the well-known unpleasant stomachie effects of salicylic acid. The bowels opened on the third day, and as the kidneys were inactive gave pot. nit. freely in the drinking water. He was a plethoric animal, and as he seemed willing to emulate Dr. Tanner and drink lots of water, I did not trouble myself much about his prolonged inappetence. All the symptoms subsided nicely; directly I stopped the acid, the appetite returned, and to-day he is as well as ever. I think this case well exemplifies the anti-rheumatic value of salicylic acid, especially in the acute form. Watch the pulse and temperature carefully, and push the acid until you get the effect you want, and keep it up until the crackling in the joints has entirely ceased. It has never disappointed me in acute rheumatism.

Will other members of the profession kindly record their experience of this agent?

DECLAT'S SOLUTION.

By H. F. JAMES, V.S.

This addition to our therapeutic agents will undoubtedly be liked by those who give it a trial. It has not the escharotic properties of carbolic acid, it favors granulation to a remarkable extent, and is a powerful antiseptic. I have used it for nearly a year as a substitute for carbolic acid in broken knees and such cases as it is desirable to have free granulation. Lately I saw an article in the REVIEW advising its use in quittor. A case of that disease presenting itself soon after, I followed the treatment recommended, but soon discarded the use of the bandage, which even with an interposed layer of antiseptic batting, made the animal very uncomfortable, and with strict cleanliness, attention, and the use of the solution twice a day, the case, which was a very bad one, is now nearly well. It may be used like carbolic acid with oil, but in almost any ratio you desire, without proving escharotic.

NEW VETERINARY COLLEGE.

VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

Special Report for the REVIEW by W. L. ZUILL, M.D., D.V.S.

The opening of the Veterinary Department of the University of Pennsylvania took place on Thursday, October 2d, at 12 o'clock. The opening address by Prof. Rnsh Shippen Huidekoper was a very able discourse, on the history, past, present, and future, of the veterinary profession. In his discourse, he referred to the feeling of pride which filled him at his selection for the duty of delivering the inaugural, not because he was an alumnus of the University, but because he was a member of the family of the founder of the Medical Department 119 years ago. The meeting, a memorial one for this department, brought out a large

assemblage of the profession from all parts of the city and neighboring towns, showing the great interest felt in this latest offspring of a world-renowned institution of education, science and literature. All present were well pleased with the facilities which the school afforded for the study of this branch of science, and predicted a great success for its future. There is a class of 24 attending lectures in this department. This is, I believe, the largest with which any school began its first year, and this number promises to increase. Beside these, there are several taking special courses.

For this year only the first or junior course of studies will be required. This is the same as is required in the Medical Department, and when the students of the Veterinary Department will be instructed, with the exception of Anatomy, Forging and Dissections, with some little change in the laboratory work, as is shown by the rosters of the two departments.

With the exception of Prof. Huidekoper, the faculty of this department are composed of professors from the Medical Department, all of whom have a world-wide reputation in their specialties. The chairs at present filled are, Internal Pathology, and *pro tempore*, Veterinary Anatomy, by Prof. Rush Shippen Huidekoper; General Pathology and Morbid Anatomy, by Prof. James Tyson; Materia Medica, Pharmacy and Therapeutics, by Prof. Horatio C. Wood; Chemistry and Toxicology, by Prof. Theodore G. Wormley; Physiology, by Prof. Harrison Allen; Botany, by Prof. Joseph T. Rothrock; Comparative Anatomy and Zoology, by Prof. Andrew J. Parker; Comparative Physiology, by Prof. Robert Mead Smith.

Among the Demonstrators, that class of instructors who form such an important adjunct of the faculty of all schools, and whose services it is hard to overestimate, I notice the name of Dr. W. Horace Hoskins, as Demonstrator of Anatomy, an alumnus of the American Veterinary College. This may be taken as additional evidence, and embodied in the history of our alumni, that many of the graduates of our alma mater are rapidly advancing to fill the higher positions of our calling, the duties of which they are well fitted to perform, by reason of the excep-

tional curriculum demanded by our school. This is also proof that the labors of the pioneer workers in our beloved profession in this country have not been in vain, that their struggles against hope have not been for naught, but as a glorious result, sending into fields which they have followed, workers of ability and promise. But I must not let love for my alma mater lead me too far from the subject matter that I have in hand. To return, I find as Demonstrators of *Materia Medica*, Therapeutics and Pharmacy another veterinarian, Dr. Alexandria Glass, a graduate of the Montreal school, Dr. Henry F. Formad, Demonstrator of Pathology and Morbid Anatomy, and Adolph W. Miller, Demonstrator of Pharmacy. The corps of professors and demonstrators is not yet complete, and will receive several valuable additions to its number during the coming year. Among the chairs remaining to be filled may be mentioned Veterinary Anatomy, Cattle Pathology, Obstetrics and Surgical Pathology, with several other branches of minor importance. This department of the University has been under contemplation for some time, and was made practicable through the acquisition of the land from the city of Philadelphia. The amount of money necessary to put up the buildings was obtained through the liberality of Mr. J. B. Lippincott and Mr. James E. Gillingham. These buildings, which are replete with every convenience, are built on the two sides of a triangle, thus enclosing a convenient and very spacious yard, the entrance to which is at the base of the triangle. The side elevation of these buildings has a front age on Pine street, and terminates at the apex in a large two-story, octagon-shaped room, particularly well lighted and ventilated, the ground floor of which is the lecture room, capable, I should judge, of accomodating about 200. The second floor is being fitted up for the museum. Opening into this from the left, or Pine street branch, are private anatomical laboratory rooms, with offices of the secretary, janitor, etc. On the other side of the triangle we have on the first floor the dissecting room and forging shop; these rooms have every appliance necessary to facilitate the work to be carried on in them, both for instructor and student. On the second floor of this building will be found

the pathological, physiological, historical and pharmaceutical laboratories, which are fitted with desks, tables, microscopes and all other conveniences necessary for the work to be done in these departments. The Hospital Department is not yet built; it is intended to accommodate about 50 head of horses, also a dairy for about 50 head of milch cows, which is expected to be self-supporting. Those buildings when finished will be so arranged that only the first or ground floors will be used for hospital and dairy purposes. The second and third floors will be fitted as dormitories for the use of students. Taking into consideration the favorable circumstances attending the birth of this new school, leaning on the reputation of one of the noblest institutions of learning in this country, it seems to me almost impossible for even the shadow of failure to fall across its pathway. Therefore, there is but one thing for it to do, and that is to stride onward and upward in the victorious course it has laid out for itself, and thus to aid in the elevation of a noble and honorable calling to the plane occupied by its sister profession.

REVIEWS.

ANATOMY OF THE HORSE, by PROF. McFADYEAU, of the Royal Veterinary Collège of Edinburgh.

We have enjoyed the opportunity, through the kindness of W. R. Jenkins, our popular veterinary publisher, of examining some of the advance sheets of this new work. This examination warrants the opinion that it will prove to be a good book for the veterinary student, though probably not so much a book on descriptive anatomy as a practical guide to the proper dissection of parts. The work will form a volume of about 350 pages, and is to be extensively illustrated with colored lithographic plates and wood cuts.

A TEXT-BOOK OF OPERATIVE VETERINARY SURGERY, by G. FLEMING, LL.D., F.R.C.V.S. Part I. (W. R. Jenkins.)

Dr. Fleming has once more placed his name on record in

veterinary literature, and has again proved his claim to rank among its most valuable contributors. Not satisfied with the long list of books and pamphlets and scientific articles which he has already produced, he comes to-day and presents to the veterinary profession at large, to practitioners as well as to students, the first and only work on operative surgery which has been published in the English language.

The issue of the book has been promised for some time, but if our patience has been put somewhat on trial by long waiting for its appearance, none of those who shall at length become its readers will hesitate to own that they have been amply rewarded at last for the postponement of their expectations.

The first part, on operative surgery, forms a neat collection of 266 pages, handsomely illustrated with 295 wood cuts, equal, and in many instances superior, in execution to any of similar nature we have seen.

After a few introductory pages, devoted to generalities, we encounter sundry chapters comprehending a variety of subjects, which may perhaps be properly denominated miscellaneous, such as the various means of restraint; the use of anæsthetics; then, simple operations of minor surgery, covering the different modes of the division and reunion of tissues. Then, passing to the second part, we are treated with operations on bony structures, fractures and dislocations; the removal of tumors, cauterization, setons, various modes of injection; operations on blood vessels, on muscles, on bones, and, in fact, upon all the organs of the function of locomotion; operations on the nerves, amputations, extraction of foreign bodies from wounds, etc., etc.

Operative Veterinary Surgery supplies a great and pressing need in veterinary literature. It is written in the peculiarly clear and intelligible style of the author, and is the work of a man who has been for many years engaged in this peculiar field. It is a book which no veterinarian or veterinary student, nor even the veterinary teacher, can dispense with, whether as a means of original education, or of reference for the proficient.

The English edition, which is published unbound, has been much improved by the strong and neat binding with which the American publisher, Mr. Jenkins, has clothed it.

PHYSIOLOGICAL CRUELTY—FACTS *vs.* FANCY. (John Wiley & Son, N. Y.)

This neat little volume would prove as useful an acquisition to the library of the veterinarian as to the physician. It discusses the subject upon which it treats clearly and with fairness, and in a very proper style presents to the determined anti-vivisectionist arguments which must prove very difficult, if not impossible, to overthrow.

A. L.

SOCIETY MEETINGS.

MASSACHUSETTS VETERINARY MEDICAL ASSOCIATION.

The fifth regular meeting of the M. V. A. was held October 1st, 1884, and called to order at 8 p. m., with W. Bryden in the chair.

Nine members answered the roll-call, and then the minutes of the last meeting were read and adopted.

Moved and seconded that Dr. Lyman's resignation be accepted. Carried.

Moved and seconded that the Chair appoint a committee of three to bring in a name for the executive committee to fill the vacancy caused by Dr. Lyman's resignation. Carried.

Simmons, Winchester and Flaunders were appointed, and Dr. Byrne's name was presented.

Moved and seconded that Dr. Byrne fill the vacancy on the Executive Committee. Carried.

The following paper was read by Dr. Skally on Gangrene, and after a general discussion a vote of thanks was tendered him. Dr. Blockwood was appointed next essayist.

J. F. WINCHESTER, D.V.S., *Sec.*

GANGRENE, NECROSIS, MORTIFICATION.

Under gangrene is understood the death of an organ or part, as manifested by the more or less rapid breaking down and chemical decomposition of its texture. Gangrene may affect both soft and solid structures, the bones, for instance, or even fluids, as in necrosis or sepsis of the blood. The breaking down of structures is generally a slow process, whilst in soft, juicy textures, and in fluids,

it is rapidly consummated. Like normal textures, new formations of every kind, tumors, exudates, pus, are liable to become necrosed. Fluids degenerate through necrosis into gangrenous ichor, the most infectious and destructive of its tribe.

A general characteristic of gangrene is not easily given, so manifold are its forms, and so various are its causes. Soft parenchymata commonly breaks down into a diffuent pulp, marked by a high degree of discoloration and of fœtor. As decomposition proceeds, gases are generated in the part, principally sulphuretted hydrogen, ammonia, nitrogen and carbonic acid. These give rise to the emphysematous crackling which is so often associated with the gangrenous processes. The tissues at the same time undergo a process of softening or liquefaction, the limb becomes exceedingly offensive, and, owing to alterations in the transuded hæmoglobin, changes from a reddish color to a brownish or greenish black. The characters of the dead part vary with its structure, its vascularity, the cause of the gangrene, the acuteness of the process, and the possibility of the access of atmospheric air. The more vascular the part, the softer the structure, and the more it is exposed to the atmosphere, the more rapidly and completely does it undergo decomposition.

Bones, cartilages, and tendons, which are firm, hard tissues, containing comparatively but few vessels, undergo very little alteration in structure and form; whereas softer parts are much more rapidly and completely destroyed.

The occurrence of decomposition manifests itself in the first place in the blood contained in the part. The hæmoglobin escapes from the red blood corpuscles, partly by exudation, and partly by the destruction of the corpuscles themselves, and dissolved in the liquor sanguinea, permeates the surrounding tissues. The corpuscles are ultimately completely annihilated, nothing remaining but a few minute granules. The staining of the tissues with the hæmoglobin is known as *post mortem* staining, and the appearances it presents are very characteristic.

All the tissues may be more or less affected, but the living membranes of the heart and large blood vessels, being in immediate contact with the blood after death, are naturally more so than other parts.

The staining is of a uniform pinkish red color, thus differing from the punctiform and stratiform redness of hyperæmia, from which it must be carefully distinguished.

The amount of staining is in proportion to the rapidity with which the decomposition has taken place, and to the amount of blood contained in the part at the time of death. Gangrene has the import sometimes of a local, sometimes a symptom, of general disease. The conditions necessary to the former case are nearly reducible to arrested afflux of blood; that is, stasis. It may begin by attacking fluid parts, and especially the blood, and extend from these to solid structures, or it may affect them all at once.

DEVELOPMENT OF GANGRENE.

Gangrene is developed—

First.—Out of absolute blood stasis, which may occur under various circumstances.

(a) Every hyperæmia in organs, or sections of organs, particularly in paralyzed or enfeebled, or obnoxious to debilitating influences, may degenerate into absolute stasis. This applies particularly to asthenic, hypostatic, hyperæmia in

torpid peripherious organs, vegetating, so to say, imperfectly under the embarrassment of continued pressure.

(b) Mechanical hyperæmia frequently becomes absolute stasis as seen in incarcerated, strangulated organs, and as a result of the plugging of the returning vessels in the lower extremities.

(c) Every inflammatory stasis may degenerate into absolute stasis, more particularly those hypostatic and asthenic inflammations which occur in organs already diseased, paralyzed or depressed by violent external influences, such as concussion, contusion, heat or cold. An inflammation consequent upon influences directly or indirectly debilitating, may acquire during its progress, a tendency to absolute stasis.

In absolute stasis, the blood undergoes gangrenous decomposition. Hence the blood is the portion originally necrosed and dissolved. It exudes in a state of gangrenous ichor through the walls of the blood vessels, causing the same gangrenous decomposition in these and in the surrounding tissues. This event gives rise to the most ordinary and most developed form of moist gangrene. The progress of this gangrene is more or less acute, the gangrenous dissolution of tissues being marked by the rapidity of its course.

Second.—Gangrene is determined by failure in supply of blood.

(a) In impermeability of large arterics,—high degree of carctation, and complete obstruction consequent upon arteritis and ossification.

Here gangrene takes the form of dry, black, nummifying gangrene.

(b) As a result of compression and tension of a part; as in strangulated hernia.

(c) As a result of local destruction of blood vessels, the denudation of parts of attaching and blood supplying textures, bones for example, of their external and internal periosteum, the common integuments of their supporting areolar tissue. The peritoncum of its subjacent layers; isolation of the pleura-pulmonalis over cavities of the lung. This gangrene appears as a white or yellowish white slough.

(d) Extensive impermeability of the capillaries and minute vessels when plugged with coagula or compressed by surrounding exudates. In the last mentioned case, the gangrene is dependent upon inflammation. To this kind of gangrene textures poor in blood vessels, such as compact bones, collasities, etc., are especially obnoxious. The color of the necrosed textures is commonly of a yellow or yellowish green hue.

Third.—The gangrene is the expression of the localization of an anomaly in the blood-crasc, either directly engrafted by contagion or developed out of other crases; a putrid decomposition of the circulating fluid. Blood so poisoned, especially if brought into stasis or into coagulation, possesses, in common with the exudates thrown out by it, an inherent tendency to gangrenous dissolution.

It has already been stated that several varieties of gangrene have been recognized—

1.—Gangrene developed out of an internal cause is distinguished, by the designation of primary gangrene, from that arising from an external cause.

2.—Hot, acute inflammatory gangrene.—True gangrene, in the manner which inflammation leads to gangrene, is sufficiently clear from the foregoing.

(a) The inflammatory stasis, owing to its very intensity, to pre-existing debility of the diseased textures, or lastly to weakening influences caused during its progress, degenerated into absolute stasis.

(b) It occasions gangrene by the crushing effect of its products upon the capillaries, or by mechanical or ulcerous isolation of the textural parts. In this way gangrene may arise in tissues laboring under the sequelæ of inflammation, without itself being an issue of the latter.

2. Cold gangrene, sphacelus.—This form is not in any way connected with inflammation.

Fourth.—Moist gangrene comprises the breaking down of fluid substances to gangrenous ichor and of fibrous textures to a various colored diffuent pulp, marked by the evolution of foetid gases. It is the gangrene developed out of absolute blood stasis; therefore, again, inflammatory gangrene. It may be compared to the decomposition of animal matter under the co-operating influence of water.

Fifth.—Dry, mummyfying and senile gangrene are the various terms designating this form of gangrene, which is caused by a deficient supply of blood. It manifests itself in the perishing of the implicated structures, with shrivelling or withering thereof to an incipiently tough, but eventually sloughing mass. Often and particularly in the extremities, owing to impermeability of their arteries, the gangrenous textures blacken; as such it is comparable to the decaying of organic matter with an insufficiency of moisture, and with the disengaging of pure carbon.

Sixth.—Black gangrene—Gangrenous slough.

Seventh.—White gangrene occurs for the most part, as a result of pressure in incarceration of the denuding of membranous expansions of their subjacent textures, for example, as peritoneal sloughing at the base of intestinal ulcers.

Of these different varieties of gangrene, several are often present at the same time. Beneath the common integuments, often transformed into a swarthy, parched rind, in senile gangrene we often meet with patches of tissue which are reduced to humid, stinking pulp.

Just as in gangrene of solids, gangrenous slough varies, so in like manner does gangrenous ichor, as necrosed blood or exudates vary, according to the crisis or constitution under which either has become attacked with gangrene.

Like normal textures, diseased textures and new growths, fibroid, cancerous formations, for example, may become a prey to gangrene. Neither to ulceration or gangrene are all textures alike obnoxious. Bony, elastic fibrous textures resist gangrene more ably than muscle. Areolar tissue, or mucous membrane, lax embryonic textures, like certain varieties of cancer, are especially prone to gangrenous destruction.

The constituent elements of gangrenous texture masses are more or less well preserved textural debris, larger or smaller black contoured molecules, down to pulverulent granular mass, black pigment granules, fat drops and crystals.

Contact with the atmosphere is by no means indispensable to the generation of gangrene. It affects equally with the external parts, organs never in contact with the air, as the liver and spleen.

A very important phenomenon involving a curative act, is the circumscrip-

tion of gangrene by an inflammatory process of ulcerative isolation of the gangrenous part through its own secretion. The ultimate healing is brought about by the same inflammatory process changing to one of pus production and of regeneration.

The organs most liable to be affected with gangrene in our practice (veterinary) are as follows, viz.: Peritoneum, stomach, intestine, liver, spleen, bladder, air passages, pleura, lungs, heart, vagina and uterus in female, and penis in male, and the tongue, and gangrene of bones. Of this last I shall not treat, leaving it to be disposed of under the common term applied to the disease, viz.: Necrosis of bone.

Gangrene of the peritoneum in the horse generally results from dividing the cord too high up, causing a high degree of erysipelatous fever, which usually extends to the peritoneum, which along with the cord and surrounding structures, speedily becomes gangrenous. It may also be caused by pressure, as in hernia.

Stomach.—This is liable to become gangrenous through the introduction into it of the various acids in an undiluted state, and of the various caustic alkalies given in large doses by persons who are ignorant of their specific actions. In reference to the intensity of the effect which may cause superficial or deep mortification of the tissues with greater or less rapidity, we distinguish several degrees. The effect is influenced by the quantity and the strength of the liquid, and the duration of the period during which it remains in contact with the parts alluded to. We generally find the effect to be less intense in the cavity of the mouth and fauces, more marked in the œsophagus, and most powerful in the stomach. The entire mucous membrane is destroyed and converted into a black, soft mass, which is distended by a sanguinous fluid, and is easily detached from the muscular coats.

Intestines.—We find these affected by gangrene as a sequel to enteritis and intussusception, but as all these cases will prove fatal, I shall not dwell longer on them.

Liver.—Gangrene of this organ is of a very rare occurrence, but it is sometimes found associated with pulmonary gangrene. It is developed in parts affected with inflammation and suppuration. It occurs in more or less circumscribed spots, in which the parenchyma is dissolved into a brownish black green pulp, which diffuses the characteristic odor of sphacelus. We find suppuration in the vicinity, which is a product of reactive inflammation, and which defines the boundaries of the mortified part.

Spleen.—Gangrene of the spleen is of as rare occurrence as the liver.

Air Passages.—This affection occurs both here and in the parenchyma of the lung in two distinct forms, either as a circumscribed eschar on the mucous membrane, eating its way into the submucous tissue, in which it may occur primarily or as a diffuse gangrenous colliquescence of the bronchial mucous membrane. The conditions under which it is developed are similar to gangrene of the lung, with which it is sometimes combined. It generally, however, occurs in tissues somewhat previously diseased, but appears rather as an accidental termination than as a necessary consequence of any peculiar local morbid process. It is most commonly associated with pulmonary gangrene.

Pleura—Gangrene of the pleura occurs in consequence of its being denuded

by accumulations of pus or ichor in the costal or pulmonary wall. The pleura then assumes the appearance of a yellowish white, or more frequently of a blackish or greenish brown lax or deliquescent slough, with superficial gangrene of the lung.

Lungs.—Gangrene of the lungs is an affection of not infrequent occurrence, and under certain hepatization of a portion of a lung is a most common complication. There are two distinct forms of gangrene of the lung, viz. : diffuse and circumscribed or gangrenous eschar. In diffuse gangrene we find a portion of the lung presenting an abnormal greenish or brownish tint, filled with a similar colored, somewhat fatty, turbid serosity, soft, rotten, and breaking readily down into a pulpy, shaggy tissue. The whole evolves the characteristic odor of sphacelus. Towards the outer portion the discoloration, infiltration and alteration of consistence are less marked, and finally become imperceptible, and there is no line of demarcation between the gangrenous and the adjacent tissue, which only differs from the normal state in being œdematous and ænemic. It corresponds to diffuse gangrene of the bronchial tubes, with which it is almost always associated. Upon the whole it is a rare affection, but when it does occur it always attains a considerable extent, as it commonly attacks one or more lobes. It is, perhaps, scarcely entitled to rank as an independent affection, as it is generally associated with eschar of the lungs, and hence it is more readily developed from the contact of the ichorous, gaseous and fluid products of the gangrenous eschar coming in contact with the bronchial and pulmonary mucous membrane, inasmuch as in all probability the disease extends from the bronchi to the lung tissue. The foregoing description of gangrene as it occurs in the upper lobes is sufficient to render this form intelligible, as well as to explain why there is no inflammatory reaction, and consequently no line of demarcation around the affected tissue. This form of gangrene very often follows as a sequel to fibrinous pneumonia.

Circumscribed or partial gangrene of the lungs appears in the form of gangrenous eschar, and is more frequent than the former variety. We find the parenchyma at some spot of varying size converted into a blackish or brownish green, hard but moist eschar, which adheres to the surrounding tissues, and evolving the peculiar odor of sphacelus, and similar to the eschar produced on the skin by nitrate of silver. It is sharply defined, and becomes gradually loosened from the surrounding tissues, and rests in a cavity corresponding to it in size and form. It may be described as a blackish green plug, which is soft on the surface, with a firm center floating in an ichorous fluid. More frequently the greater portion of the eschar softens and becomes dissolved into a greenish brown fœtid ichorous pulp, mixed with rotten, shaggy fragments of tissue, and enclosed in a cavity, whose walls are lined by a shaggy tissue, infiltrated with ichor.

These eschars may either occur singly, or several may be present. If the gangrenous eschar becomes detached it falls into the cavity of the thorax unless there be firm adhesions at the spot, or else it becomes dissolved, and the ichorous semi-solid matter is effused into the pleural sac, and gives rise to pleurisy with ichorous exudation, and to pneumothorax, since the fœtid gas evolved from the gangrenous mass either collects alone in the thorax, or atmospheric air finds its way out through the bronchial tubes which opens into the abscess, and thus mixes with the aforesaid gas in the thorax. Partial gangrene often arises in the

perfectly healthy lungs of weak, decrepit and cachetic animals from general depressing influences, and is developed from a circumscribed passive stasis. Under similar circumstances we find it associated with pneumonia in its various stages, with pulmonary abscesses, with tuberculosis, with bronchitis, or it may be caused by the absorption of gangrenous ichor from gangrene of different parts into the blood.

Heart.—There is nothing at variance with the possibility of the occurrence of gangrene in the muscular substance of the heart. Ulcerations accompanied with malignant products are not of rare occurrence, but the correctness of the observations purporting to refer to gangrene of the heart have nevertheless been called in question by several writers; and we must remark that no case of the kind ever came under our notice.

Uterus.—We sometimes find gangrene of the uterus resulting from inversion, causing a gradual compression of the veins, the vessels become engorged with blood admitted to them faster than it can leave them, and so after intense congestion mortification ensues.

Penis.—We also meet with gangrene of the penis resulting from paraphimosis or strangulation of the glans penis.

Tongue.—The point of this organ is in rare cases found in a gangrenous condition caused generally by the administration of some caustic irritant, such as turpentine, potash, etc.; also by the pressure of the halter rope in leading, when it passed through the mouth enclosing the tongue.

When mortification has a tendency to spread, its dark color is gradually lost in the surrounding tissue. Whereas, when it ceases to spread, a red line, called the line of demarcation, separates the dead from the living tissue. This line is always regarded as most important, indicating that sloughing has ceased to spread, and that a process has begun for the removal of the sphacelated mass from the system. The final act in the separation of dead tissue is that of ulceration of portions of living tissue, which are in immediate contact with the dead. A groove is formed by this ulceration which circumscribes and entrenches the dead part, and then gradually deepening and converging, undermines it until it reaches the centre, when the separation is complete and the slough falls off or is dislodged.

By the discharge of the ulcerated living tissue concomitant with this process of destruction one of repair is set up. As the ulcerated groove deepens, so do granulation cells rise from its surface, so that one might say that which yesterday was ulcerating is granulating to-day, and thus very soon after the slough has separated the whole surface of the living part from which it was detached is covered with granulation and proceeds like an ordinary ulcer towards healing.

ORGANIZATION OF THE BUREAU OF ANIMAL INDUSTRY.

A note received from Dr. E. Salmon, Chief Veterinarian of the Bureau of Animal Industry, indicates the following gentlemen who are acting as members of the Bureau: Drs. W. B. E. Miller, D.V.S., C. B. Michener, D.V.S., T. J. Hoor, D.V.S., H.

W. Rowland, D.V.S., J. W. Hawk, D.V.S., W. H. Rose, V.S., W. Rose, D.V.S., W. H. Wray, D.V.S., M. R. Trumbower, V.S.

Drs. M. Bunker, Farrington and W. H. Rose are in charge of quarantine stations under the Department of Agriculture, and practically, though not officially, also form a part of the Bureau of Animal Industry.

ARMY INTELLIGENCE.

Dr. C. L. Moulton, formerly veterinarian in the active service of the army, having resigned his commission in July, 1884, has been appointed Veterinary Surgeon to the Quartermaster's Department in Washington, in place of Dr. Joseph L. Bushman, M.R.C.V.S., who held the position for several years past.

EXCHANGES, ETC., RECEIVED.

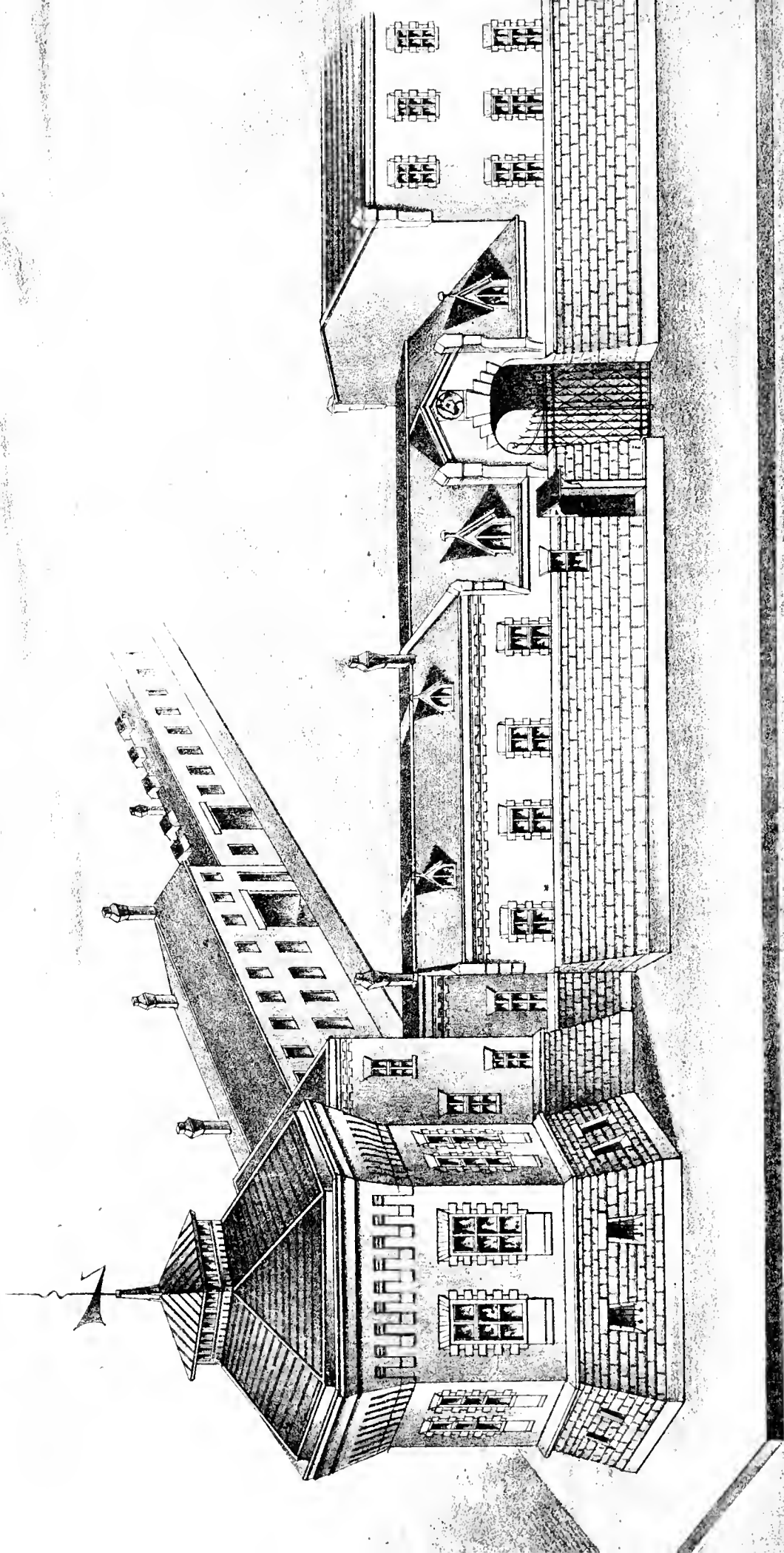
FOREIGN.—*Annales de Bruxelles*, *Revue für Thierheilkunde und Thierzucht*, *Clinica Veterinaria*, *Revue Scientifique*, *Gazette Medicale*, *Archives Veterinaria*, *Recueil de Medecine Veterinaire*, *Echo Veterinaire*, *Presse Veterinaire*, *Veterinarian*, *Veterinary Journal*,

HOME.—*Medical Record*, *Annals of Hygiene*, *Spirit of the Times*, *Turf, Field and Farm*, *Scientific Journal*, *Prairie Farmer*, *Country Gentleman*, *American Agriculturist*.

JOURNALS.—*Gazette of Montreal*, *Hearth and Home*, *Practical Farmer*, *Ohio Farmer*, *Maine Farmer*, &c., &c.

BOOKS.—*Operative Veterinary Surgery*, (by G. Fleming), *Report of the Board of Agriculture*, (of Maine), *Animal Castration*, (by A. Liautard), *Physiological Cruelty*.

CORRESPONDENCE.—G. W. Smith, J. C. Meyer, Jr., J. Winchester, H. T. James, W. H. Pendry, Thos. Sturgis, W. L. Zuill, M. D., C. L. Moulton, Prof. M. Stalker, D. E. Salmon, D. McEachran, W. C. Conklin, F. S. Billings, J. D. Hopkins, W. H. Hoskins, J. A. Waugh, A. A. Holcombe, R. S. Huidekoper.



BUILDINGS OF THE VETERINARY DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA, Phila.

36th STREET.

GUARDIAN AVENUE.

FUTURE
BLACKSMITH SHOPS.

CATTLE
STABLES.

CONTAGIOUS
DISEASES.

BOTANICAL GARDEN.

AMPHITHEATRE.

PROFESSOR OF ANATOMY. JANITOR

DISSECTING
ROOM.

FORGES.

STABLES TO BE ERECTED

BIOLOGICAL
LABORATORY.

PINE STREET.

AMERICAN VETERINARY REVIEW,

DECEMBER, 1884.

ORIGINAL ARTICLES.

INTRODUCTORY ADDRESS

At the Opening of the Veterinary Department, University of Pennsylvania,
October 2nd, 1884,

BY RUSH SHIPPEN HUIDEKOPER.

Professor of Internal Pathology and Contagious Diseases (pro tempore of Anatomy), and Dean of the Veterinary Faculty, University of Pennsylvania; Doctor of Medicine, University of Pennsylvania; Veterinary Surgeon, Alfort, France; Major and Surgeon, 1st Brigade, N. G. of Pennsylvania; Fellow of the College of Physicians, Philadelphia; Member of the U. S. Veterinary Medical Association; Ex-Coroner's Physician of Philadelphia, etc., etc.

“Il poco e niun conto in cui é tenuta la Veterinaria presso di noi, é cagione de gravissimi danni, non dico alla scienza ma agli interessi economici di tutto il paese. Onde me parve de non errare, prefiggendomi lo scopo di aiutare i giovani cultori la Veterinaria a comprendere l'importanza della loro scienza, ed a presentare i luminosi destini a cui é chiamata nell'avvenire.”—ERCOLANI.

Mr. Provost and Gentlemen:

I have to-day the honor to deliver the first address of this new Department of the University of Pennsylvania for the instruction of Veterinary Medicine. I feel that I have a right to the pleasure and pride I take in the position you have awarded me, as a Pennsylvanian, an alumnus of this university, and as a member of the family of the founder of its Medical Department, which for one hundred and nineteen years has stood at the head of medical teaching in the United States; but I am awed by the

responsibility which it places upon me. At the founding of the Medical Department the country was new, any advance given to the people for their education was a boon, which they welcomed no matter how small it was. The physician and surgeon were so needed, that they rose rapidly to a position which was socially better than it had been in the mother-country ; every addition to the ranks of medicine was regarded as a public benefaction, for life is always man's greatest care.

In founding a veterinary school we have much to labor against. While a few people fortunately look upon the philanthropic side of veterinary medicine, the majority only employ a veterinary surgeon as a means of saving or of utilizing so many dollars and cents in the form of a domestic animal. Popular prejudice has classed the "horse doctor" and the "cow leech" with the most ignorant farrier, and has tainted him with the reputation for dishonesty of the proverbial horse dealer ; medical men have classed him the least educated empiric of their own cast, and, with the exception of a few individuals, no one has thought for a moment that the responsibility of the average ignorance was upon himself and his government. Happily there are always men enterprising beyond their fellows, and throughout the country are many practitioners who have had the diligence to labor and the intelligence to appreciate what their experience has shown them ; the want of journals and the small demand for and high price of veterinary books, except of the "Universal Stock Book and Veterinary Compendium" order, has prevented these men from being known outside their own locality. Medical publishers hesitate to print the work of a veterinary surgeon unless it is of exceptionable merit, and books of technical worth are only bought by the few physicians whose personal tastes interest them in animals, as a pastime or for laboratory research ; books which are within the scope of the layman's understanding are of little accuracy and value, and are apt to condemn the author in the eyes of the scientific man.

In establishing an institution for the advancement of veterinary knowledge, and in asking intelligent and reputable men to select it for a profession whereby they may gain a reputation and

livelihood, we have to contend with the prejudice which ignorance has attached to veterinary surgeons as a class, and with the reluctance which the aspirants for this title feel, in offering to devote a long period of hard work to gain that which their neighbor, the farrier, acquired the day he opened a suppurating corn in a lame horse and sent it home sound, or the cow-leech took to himself when he gave some chance herb to a cow down with the milk fever and she recovered, as they sometimes do by the aid of nature. Before entering upon the causes which led to the foundation of this department of the university and its aims for the future, I will give a short review of the development of veterinary medicine in other countries and in our own.

Veterinary medicine derives its name from the Latin "veterinarium," "veterinaria," veterinary medicine, "veterinarius" a veterinary surgeon, these terms coming from the "Veterinæ" or "Veheterinæ," the general term used by the Romans for beasts of burden or pack animals, from "vehere" to carry. Lenglet, however, claims that the term is of much older and of Celtic origin, being derived from "vee" or "vieh" cattle, and the verb "teeren" to be sick. Nearly all languages employ words from this same root; French "veterinaire," Italian "veterinaria," South Germany, Hungarian and Russian "veterinär," but in North Germany "thierarzt" and "thier-medizin" (animal doctor and animal medicine) are more generally used.

Veterinary medicine comprises not only the study of anatomy, physiology, chemistry, materia medica and diseases in their relationship to animals, but includes with equal importance the laws of breeding animals and of raising and training them to be of greatest service to man, whether as motors or as machines for the production of milk, food and clothing; these uses in turn necessitate a knowledge of farriery and the inspection of meat when used as food.

The earliest references to the diseases of animals are found contemporaneously with the first medical writings. Æsculapins in mythological history includes a knowledge of horses, which he derived from Chiron, the Centaur. Hippocrates (460-377 B. C.) described the symptoms of diseases and the remedies to be used

in animals. Zend Avesta, the Arab, and Charaka, the Hindoo, mention several of their maladies. Ebers shows that dissection was carried on during the earliest Egyptian dynasties, and probably much more frequently in animals than in man, on account of the rigid religious rules in regard to the dead. The Egyptians had as many specialties as a medical school of to-day, and distinct mention is made of doctors for fowls. Numerous references are made in the Bible to diseases of animals and to herbs used in curing their troubles, and in the Mosaic laws we have clear orders for the inspection of meat and the division of animals into the pure and impure. Diocles (360 B. C.) derived most of his knowledge of anatomy from animals, and Xenophon (445 B. C.) in his treatise on cavalry describes some of the ailments of horses and especially speaks of founder. Aristotle (384-322 B. C.) wrote a work of some size on animal medicine which has been translated with great care by Doctors Anbert and Wimmer. Pamphylus of Alexandria (200 B. C.) Florentius, and Magon of Carthage at about the same date wrote works which were complete for the time; the latter was translated by Dionysius of Utica.

In early times the practice of animal medicine was almost exclusively confined to the shepherds and farriers, who rarely raised themselves above the common ignorance of the day. The surgical operations were limited to castration of the male of all species, and to the castration of female swine, which was also done by the earliest nomad races, and at the beginning of the Christian Era was a well known operation in Italy and Gaul. In the prime of the Grecian rule of the world, we find accounts of doctors for horses, who had, however, but a summary knowledge of diseases and blemishes, but who kept in accord with the spirit of the age in proposing great numbers and varieties of curative medicines. The writings of these men, composed almost entirely of letters, were collected in the 10th century by order of the Greek Emperor, Constantine Porphyrogenetors, and were printed in the 16th century in both Greek and Latin text. The Roman Emperors employed veterinary surgeons in their armies and the Emperor Augustus ordered the erection of hospitals for sick animals, styled "Veterinarium," in contradistinction to the "vale-

udinarium" or hospital for sick soldiers. The Roman writers on agriculture described numerous diseases of sheep, goats and swine, but their works are only of historical interest. Cato (234-149 B. C.), Varro (116 B. C.), in his "De re rustica" and Celsus (40 B. C.) are full of the superstitions of the age and ascribe to the stars, to the moon and the various natural phenomena the greatest influence on diseases of animals and the remedies to be used in healing them. Columella (40 A. D.) in volumes six and seven of his twelve volume "De re rustica," treats extensively of animals; he recommends bleeding, describes castration and the use of the hot iron, and splints for fracture. Pedanius Dioscoridius, 20 years latter, gives an account of hydrophobia. Pliny, the younger, and Galen speak of the scab in sheep. In the middle of the 4th century Apsyrtus established the diagnosis of strangles from glanders, gave a description of moon blindness, founder, tetanus, cough, tuberculosis and several of the contagious diseases, and he proposed curative means of extreme common sense. At latter end of the same century Vegetius Renatus, a Latin, collected most of the known writings of his predecessors and compiled a work of veterinary medicine. From the 7th to the 13th centuries we find scarcely a trace of literature on veterinary subjects, except from the pens of Abu Bekr, Avicenna (980-1037 A.D.) and Ibu el Beilhar (1248 A.D.), all of them Arabs. Then as now among the Arabs the art of healing a horse was regarded as a gift of God, belonging to special families and transmitted by them to their descendants. To offer them pay would be an insult, and their only reward is the most profuse hospitality from their neighbors.

During the early days of the Middle Ages the rulers of states were, with a few exceptions, too much occupied with wars to devote any thought to the advancement of science or to the promotion of agriculture. Under Frederick II, however, Jordanus Ruffus (1194 to 1250 A. D.) wrote a book of considerable value, in which spavin is described, among other blemishes, with great credit. In 1270, Theodoric, Bishop of Servia, also wrote a book of value. The superstition of the Greek and Roman days, which perverted the symptoms of diseases and rendered all study of a

rational nature futile, was in the Middle Ages replaced by a superstition more deleterious still to the advancement of any knowledge of animal diseases. The epidemics of the contagious diseases were considered a visitation and punishment of God, and it was thought improper to treat such sick beasts or to dissect their dead bodies. During the 15th century a school of cavalry was established in Naples and from it developed men with considerable veterinary attainments. Carraccioli, Grisone and others have left us books in quantity.

The 16th century is the real commencement of a practical Veterinary Era. At this time the wars of Europe were at perfection, the warriors had learned to protect their horses with heavy armor and required good horses to carry it, the gentler amusement of tournaments was indulged in alike by warriors and the secular and ecclesiastical princes and nobles, and required horses of spirit and speed to satisfy their ambition; hawking, other sports and the advancing refinement of civilization which brought ladies, priests, scientific men and the artist followers into the amusements and travels of the courts, demanded palfreys and hinnies for their use. All this led to the breeding of better animals and produced numerous writers concerning the raising and care of the horse, his diseases and blemishes, the mode of curing them and equitation. The breeds of horses at this period in Italy had attained such a reputation that popes, cardinals, princes and all the greater nobles had their special brands and marks, and most of the books contained cuts of them, with a description of the peculiar merits of the animals.

In 1590 the Senator Carlo Ruini of Bologna, a celebrated teacher of medicine in several of the North Italian universities and one of the discoverers of the circulation of the blood, published a large and valuable work in folio on the anatomy and blemishes of the horse. He founded in the university at Bologna the first and to-day the greatest veterinary museum in the world. In the 17th and 18th centuries horses had acquired a relatively high value and the numerous works which appeared on Hippology contained additional chapters on the diseases of animals. Some attention was at this, the so called "Stable-master's period," paid

to dogs, hawks and other sporting animals; officers of the army and officials of the breeding studs were obliged to apply themselves to the cure of their ailments. In the 18th century the rinderpest ravaged over the most of Europe, princes and governments commissioned the celebrities in medicine of the day to search for a remedy for the treatment or prevention of this pernicious disease. Several of the governments recognized the necessity for institutions for veterinary studies, but the jealousies of the stud masters on one hand and the military and epidemic police authorities on the other, prevented the accomplishment of any definite plan.

In 1762 Claude Bourgelet, a French advocate, who was a lover of horses, and as an amateur had attained considerable knowledge of animals and of medicine, placed the fruits of his labor and his extraordinary intellect to use. He founded from his own resources, which were limited, a school for teaching veterinary medicine, at Lyons, in the centre of France; the only qualification demanded from scholars was a good character; the course extended over one year and treated principally of the horse. The success and fame of this school was immediate and great; not only were a large number of French scholars attracted to it, but most of the neighboring governments sent students to learn the merits of it. The French government, which has always been the foster mother of science, now assumed the responsibility of the institution, enlarged it, and in 1765 called Bourgelat to Paris to establish a second school. This was placed at Alfort on the site of the Royal Menagerie, and special attention was paid to cattle and sheep. There was at this time in Paris a private school, rich in the teaching of Lafosse the younger, but from unfortunate personal and political differences between Lafosse and Bourgelat no fusion of their teaching could ever be accomplished. While Austria, Prussia and the greater German States, England, Denmark and Italy resolved at once to profit by the example of France, the realization of their plans differed greatly and was not everywhere immediately completed. Italy and the Teutonic races were the first to follow with success; their institutions were started under two distinct plans, one the founding of a

complete veterinary faculty, the other the addition of a single veterinary chair to the existing universities. The university plan suffered from being unable to furnish sufficient clinical material; enough instruction in anatomy and the teaching was allied too closely to that of human medicine, too little practical instruction was given in the elementary parts of proper veterinary training and in the study of animal epidemics. The co-education of veterinary and medical students was strongly urged in a memoir of Cothenius, the body physician of Frederick the Great; he also argued that medical students should have a knowledge of animal epidemics so that they might afterwards officiate as veterinary inspectors. The first veterinary school to follow those in France was in Turin in Piedmont, under Charles Emanuel III, King of Sardinia, 1769; that at Copenhagen, Denmark, was founded in 1773 with Abildgaard in charge.

In Vienna, Austria, an advanced farrier's school, where a few operations were performed, existed from 1767 to 1777. Vienna had long been renowned for its guild of farriers, of whom a monument stands to-day in the Graben, in the form of a tree stump converted into a column of iron by the horse shoe nails which each smith drove into it on becoming a member of the guild. In 1764 the Empress Maria Theresa sent a soldier named Scotti, an apothecary named Mengman, and a certain Haller to Lyons for two years, who upon their return gave a limited course of instruction with success. In 1769 the Empress sent a surgeon named Wolstein, accompanied by a smith, to Alfort, where they remained two years taking advantage also of Lafosse's clinic in Paris; they then travelled through England, Holland, Denmark and Germany and returned in 1775, having spent six years in preparing themselves for their work. This complete training entitled Wolstein to the consideration he received in the hands of the Emperor, who granted him his demands for a course of two years, embracing anatomy, exterior anatomy, diatetics, breeding, shoeing, practice of medicine, materia medica, botany and chemistry, also a stable for 30 horses, 6 to 8 cows and swine and 15 to 20 smaller animals. The result of this foundation has always been one of the most methodical schools of Europe. The teachers for other schools were

mostly recruited from surgeons and smiths who were sent by their governments to the French schools, and a number of institutions were rapidly founded in Hanover, 1778, Dresden, 1780, Milan, 1787, Berlin and Munich, 1790, London, 1791, Madrid, 1793, Gressen, 1798, Petersburg, Russia, 1808, Naples, 1815, Berne, 1816, Zurich, 1819, Skara in Sweden, Stuttgart and Utrecht, 1821, Edinburgh and Toulouse, 1825, Alexandria in Egypt and Lisbon, 1830, Cureghem, near Brussels, 1832, Warsaw, 1840, Constantinople, 1842, and others.

In England the Royal College of Veterinary Surgeons was founded in 1791 by a number of noblemen and rich cattle owners, at the instigation of a French veterinarian, Vial de Saint Bel, who became the first director. It never received government aid, but has been supported by subscriptions of members of the society, by scholars' fees, by an annual subscription from the Agricultural Society and by the board of the animals in its hospital. Two institutions of a similar nature have been undertaken in recent years in London, by Ainslie and Gamgee, but they were short lived, though the latter did much to awaken an interest in scientific training. The Dick College in Edinburgh, Scotland, founded in 1825, has furnished many teachers and practitioners of renown, and by recent rich bequests promises to take on renewed vigor. The New School in Edinburgh, under Prof. Williams, has just been re-established in fine buildings. Dublin and Glasgow have each a school. In Italy the schools of Turin, Milan and Naples draw the largest number of students, while there are also institutions rich in their museums, libraries and laboratories, at Bologna, Pisa, Parma and Modena, with secondary schools at Perugia and several smaller towns. The teachers are all government officers.

In Germany many of the veterinary chairs in the universities have disappeared, or are little known, but that of Giessen has always held a well deserved reputation, and in Halle Professor Putz is making a name for his chair through his valuable scientific work on the contagious diseases. The Berlin school is the great clinical school of Germany, while Dresden and Munich are well known for their work in anatomy and laboratory research.

In addition to the schools of Warsaw and Petersburg, in Russia, others have been founded in Cracow, Dorpat, in Livonia and in the Kassan; these schools are attached to the medical and surgical faculties and require five years study. The course is most thorough and from each graduating class are selected, by competitive examination, two students, who under pay and at the expense of the government, are sent to the other schools of Europe to perfect themselves in special branches; on their return they pass an examination, which, if satisfactory, attaches them to the faculty, which they enter when a vacancy occurs. The professional and military standing of veterinary surgeons in Russia is probably the highest rank attained in any country. In Italy the graduates rank as doctors, and the diploma is a university degree. In Austria the faculty must possess both the veterinary diploma and that of doctor of medicine. In France and Germany the faculties are recruited from among veterinary surgeons, but while the military veterinary surgeons enter as officers in France, they only attain that grade in Germany on becoming senior veterinary surgeon of a regiment, but it must be remembered that military surgeons in Prussia were non-commissioned officers in 1840. In Holland the faculty was composed entirely of medical men until 1851, when veterinary surgeons were admitted as teachers. In England the position of a veterinary surgeon has much improved in recent years; while the military veterinarian became an officer in the early part of the century, the position of the practitioner kept steadily in the background of the medical man, who in turn remained an apothecary until the medical profession was entered by men with titles to their names. It has been mainly due to the efforts of Mr. Fleming, the Chief of the Veterinary Department of the army, that a great improvement has taken place in the profession, and the last ostracism was removed in June, 1883, when he obtained for the military veterinary surgeon the entree to Court.

The course of study in the European schools, while every where thorough, varies considerably in its details. It is shortest in England, where three partial years only are demanded. These are devoted essentially to making practitioners, and during the long

vacations the students are supposed to be serving with preceptors. For many years English instruction was too exclusively devoted to the horse, but recently much more attention has been paid to cattle and other animals, and laboratories for practical teaching are being added, which promise a greater amount of scientific medical education. The *Veterinarian*, a monthly journal, was established in 1828, and has continued uninterruptedly since; there are many veterinary books in English, but unfortunately too many of them are of a routine character, and better suited to the stable man than to the medical man. There are, however, numerous exceptions, and the names of Bracy Clark, Percivall, Williams, Fleming and others will always be honored. French, German and Italian books are comparatively limited in numbers, but are of scientific value. The oldest of veterinary journals, the *Receuil de Médecine Vétérinaire*, was established in 1824, and the oldest German journal, the *Vierteljahrschrift für Wissenschaftliche Veterinärkunde*, in Vienna in 1851. - The Austrian and Hungarian Institution teach for three years with a two years course for higher grade farriers. In these there is much more laboratory work. The magnificent new institution at Buda-Pesth has just been built on ample ground, and fitted with every facility for theoretical and practical work. At its side the Agricultural School is in course of construction, and many of the chairs will be common to both. The German schools teach for three and a half years, while the Belgian, Italian and French cover four years in their course of study. The school at Alfort, near Paris, is *par excellence* the greatest clinical school, where a hundred animals can be seen each day. Berlin, Lyons, Vienna have large clinics and do more laboratory work. The Toulouse and Swiss schools, with that at Utrecht, have the greatest reputation for cattle practice, and at Munich special attention is given to diseases of the eye in the lower animals, and for this branch a journal is now published.

While there have often been individual veterinary surgeons well known outside of their own profession, it has been within very recent years that we can count with pride enough scientific men to show a marked elevation in the standing of our colleagues.

But recently we have lost Ercolani of Bologna, who was known throughout the scientific world for his researches in comparative anatomy, histology of the organs and animal parasites; greater perhaps to an Italian was his reputation as a patriot and statesman in aiding the consolidation of Italy. Gurlt also was a veterinary teacher; Thiernesse, the late Director of the Cureghem School, was Secretary of the Academy of Medicine, in Brussels; Bonley, to-day Vice-President of the Académie des Sciences in Paris and professor at the side of Milne-Edwards in the Museum, was the greatest veterinary clinician ever known. Chauveau, the anatomist and physiologist, is Director of the Veterinary School in Lyons, and professor in the Medical Faculty, in which positions he preferred to remain when he refused the chair of Claude Bernard; Bollinger, Siedemgrotzky, Heusinger, Goubaux and others, whose names are well known in scientific journals, are veterinary surgeons. In the staff of assistants who accompanied Pasteur to Egypt to study the cholera was Nocard, a veterinary teacher in Alfort.

While preparing myself for my position here I had the opportunity of visiting many of the schools of which I have just spoken, and working in several of them, and I beg to be allowed this occasion to publicly testify my thanks and gratitude for the almost universal courtesy, politeness and aid which I received. It was first shown me as your representative, although in many cases it developed into warm personal friendships, and you will allow me to especially mention M. Bouley, M. Goubaux and the Faculty of Alfort, M. Chauveau, and the Faculty of Lyons, M. Marey, the Faculty of the Vienna school, Professors Dieckhoff at Berlin, and Leisering at Dresden, Lanzillotti Buonsanti at Milan and Mr. Flenning and Professor Williams in England and Scotland. To the memory of Ercolani I can only add the feeling of reverence which everyone had who knew him personally.

In America the advance in veterinary medicine has been far from keeping pace with our national reputation for energy and self-preservation.

In 1806 Dr. Benjamin Rush, of this University, who had just

been in Europe, and had seen the success of the institutions then a few decades old, wrote a letter to the Agricultural Society of Philadelphia, and urged the importance of adding a Veterinary Department to the University. He called attention to the agricultural prospects of the country, and his letter was discussed before the Society in 1807, but nothing practical was done. Our domestic animals have steadily increased in number and in value since that time. We had in 1852, horses, 5,000,000; cattle, 17,000,000; sheep, 22,000,000; swine, 30,000,000; value, \$600,000,000; and to-day we have in the United States, horses, 10,838,111; value, \$765,041,308; mules, 1,871,079; value, \$148,732,390; milch cows, 13,125,685; value, \$396,575,405; oxen, &c., 28,046,477; value, \$611,549,109. Total cattle, 41,171,762; value, \$1,009,114,514; sheep, 49,237,291; value, \$124,365,835; hogs, 43,270,086; value, \$291,951,221—a total of 176,488,329 animals, representing a value of \$2,338,215,268; and there are, perhaps, in the United States only some 500 veterinary surgeons who hold certificates showing that they are properly qualified to practice. An importation of the Russian rinderpest into the port of New York would probably be followed by the destruction of thirteen millions of cattle, or three hundred million dollars' worth of property in twelve months.

Valuable breeds of animals have been imported and developed here until individual horses, cows and sheep reach the enormous value of thousands of dollars. With the increase in the number of animals the ordinary accidental and sporadic diseases have of course increased in the same ratio, but with the augmented number of valuable animals wanted here and there over the country for breeding purposes, with the increased number of horses sent to the large cities for motors, and the thousands of cattle shipped for food in dirty, non-disinfected cars and boats, the increase of traumatic and contagious diseases have been in much greater proportion. Our Government has not done the first thing toward furnishing men capable of combating these scourges; even in the army the handful of veterinary surgeons are not recognized as officers, and have so little authority that on an outbreak of glanders they have not the power to condemn or sequester an animal

if the Colonel thinks it has the disease in what his ignorance calls a non-contagious stage. The still smaller number of officers appointed by the Treasury Department to establish quarantine in order to protect us from imported diseases has been composed of competent men, but too few in number, and without sufficient means and law at their disposal to take proper precautions. The contagious diseases are left for the States to cope with alone, each protecting itself as it sees fit, regardless of its neighbors.

The first veterinary record made in the United States was made in Philadelphia, 1818, when we find in the registry of the Clerk of the Eastern District that, "James Carver hath deposited in this office the title of a book the right whereof he claims as author, in the words following: 'The Farriers' Magazine; or, Archives of Veterinary Science,' containing the anatomy, physiology and pathology of the horse and other domestic animals." Nine years later John Rose, a Prussian graduate, settled in New York, about the same year the well known Mr. Michener began practice in Pennsylvania. In 1851 a Mr. G. H. Dadd, a self-named veterinary surgeon, started a veterinary journal in Boston which lived but a year, to be revived again in 1855 as the *American Veterinary Journal*, and the same year Mr. Dadd and several associates formed the first veterinary school in the country which, however, soon disappeared. The New York College of Veterinary Surgeons was chartered in 1857, and up to 1875 led a feeble existence, during which time it issued some eighteen diplomas. The Pennsylvania College, chartered in 1866, has continued its organization, but without a regular course of instruction. Two years later the Illinois Industrial University and Cornell added Dr. Prentice and Professor James Law to their faculties and have given regular lectures. They were followed by Amherst (1869), the Ohio Agricultural College (1870), and Ames, Iowa. In 1875 the American Veterinary College was formed in New York from the New York College of Veterinary Surgeons, with Professor Liautard, a French graduate, at its head. This school has steadily increased in value and number of students. It was the first med-

ical school in the State of New York to require a matriculation examination. It has issued diplomas to 133 of its students, many of whom are in Pennsylvania. In 1862 a school was established in Toronto which, like the New York school, demands but two years' study. The Montreal school, founded in 1866, and directed by Mr. MacEachran, requires three winters. Recently a new school has been established in Chicago, and one in Minneapolis. These schools are dependent on scholars' fees for support, and with the precedents of the medical schools of the country, find that two winters are all that can, with pecuniary profit, be demanded for forcing into the heads of young men, often with but little previous education, the elements of medicine with its vast amount of practical details, and the long row of diseases with their variations in half a dozen widely differing species of animals—less time than it takes for a shoemaker's apprentice to learn to cobble shoes, a clerk to become a book-keeper, or a farrier's boy to be trusted to put ordinary shoes on a horse. Harvard University established a veterinary department last year and has a hospital of some size. It requires three years' study and gives a thorough course of instruction. The school is in charge of Professor Lyman. The *American Veterinary Review* published in New York since 1877, has continued a journal of scientific merit. The United States Veterinary Medical Association, formed in 1863, is composed of the leading veterinary surgeons throughout the country and has held semiannual meetings at New York and Boston until the present autumn, when the meeting was held in Cincinnati. In 1870 the late Dr. S. D. Gross, with the keen appreciation and ready heart for the demands of medical education, framed and presented the following resolutions to the American Medical Association, but his noble attempt to advance our profession failed—was lost by a large majority.

“*Whereas*, We regard the cultivation of veterinary science of the most vital importance, not only to the advancement of human medicine, but also for reasons of political economy and agricultural interest,

“*Resolved*, First.—That we recommend the State and County Medical Societies to use their influence in the establishment and

support of veterinary schools in their respective States. Second.—That they ask the Governors of their respective States to recommend in their messages to their Legislatures the importance of establishing veterinary colleges, and that appropriations be made to support them. Third.—That they recommend the Governor and the State Legislature when organizing Boards of Health to appoint one or more thoroughly educated veterinary surgeons to be associated as commissioners with other medical officers.

“*Resolved*, That we recommend the employment of veterinary surgeons in the army, and one in the Agricultural Department, with rank and pay of other medical officers.”

Our Veterinary Department has been contemplated for some time, and was rendered practicable through the acquisition by the university of this piece of land from the city of Philadelphia, and the liberality of Mr. J. B. Lippincott and Mr. Joseph E. Gillingham, who have furnished the means for these substantial buildings and outfit. Unfortunately a veterinary school cannot be ordered and completed like a primary school house, and we have but the corner stone of what I believe will be a great institution.

We open to-day with the veterinary course of the first year only; our matriculants, twenty in number, have been required to show a sufficient previous education or have passed a preliminary examination equivalent to that of the Medical Department. This requirement is too little for men who should be qualified to undertake the mathematics needed in a problem of chemical analysis, electricity, or the value of a muscular movement in the physiological study of an animal, or to handle easily the technical terms derived from Greek and Latin, which medicine has found it proper to employ for nomenclature, but it is sufficient to guarantee that the student has enough education to appreciate what will be taught him, with great diligence and labor on his own part.

Our students will learn this year, on the same footing as those of the medical department, the study of chemistry with its practical courses under Professor Wormley; they will follow the course of *materia medica* and pharmacy under Dr. Miller and

Dr. Alexander Glass, V.S., in order to familiarize them with the specialties required in compounding veterinary medicines; they will have the full course of physiology from Professor Allen, and where this is inadequate for veterinary instruction, as it is necessarily prepared for the students of human medicine, there will be supplementary lectures by Professor Smith, who will also direct them in practical work with special reference to the domestic animals; the elementary course in general pathology under Professor Tyson will be the same for the veterinary and medical student. Professor Rothrock will not only give them general botany, but will pay special attention to the plants used for forage and their nutritive value. Professor Parker in his course of zoology, after giving them the general laws of the development and classification of animals, will dwell upon the helminths and animal parasites; the course of anatomy will embrace the horse, cow, sheep, goat, hog, dogs, cats and poultry, and in the course of histology, the tissues of these animals will be used; from the microscope the student will go to the blacksmith shop, where he will learn to forge and to shoe the horse's foot. This last course has never been practically carried out in the English speaking schools, but is essential to the veterinary surgeon; he will never be a farrier and in practice will avoid even taking off a shoe when he can get anyone else to do it for him, but shoeing is the cause of nine-tenths of the surgical evils in the horse, and without a thorough practical knowledge of it, it is impossible to obtain from or show to a blacksmith what one wants.

In the second year, medical or organic chemistry will be taught and examinations will be held; the course of physiology, botany, zoology and anatomy will be finished; the students will commence their lectures in therapeutics, with practical demonstrations of the effects of drugs on the domestic animals; they will continue the course of general pathology; with the second year will commence the lectures on surgical pathology, internal pathology and the contagious diseases or practice of medicine. These same lectures will be continued the third year with the addition of lectures on obstetrics and zootechnics, or the laws of breeding and raising animals, and the modes employed for obtain-

ing the greatest use from them, as they may be destined for animal motors or machines for the production of milk, wool or flesh. A course will be given on the preparation of butcher meat, showing the most humane methods for slaughtering animals for food, the preparation of the meat and the signs of unhealthy or diseased flesh in the living or dressed animal; there will also be lectures on sanitary police familiarizing students with the inadequate laws of this country and those of other countries which they may use as models when called upon to consult in these matters. With the commencement of the second year the student will enter the hospital and during it and the following year will have direct charge of the sick animals; they will keep the clinical records, administer the medicines, perform minor operations, and in case of death make the autopsies. Each in turn will serve in the hospital pharmacy, and prepare all medicines required in the institution.

Such, gentlemen, is the plan of study which we have laid out for making veterinary surgeons. This training thoroughly carried out will give us men fully capable of being the scientific peers of any doctor of medicine; it will form men completely fitted for any trust in an animal epidemic or in the minor details of a routine practice. A man with this education will hold his head up among his fellows, and when a stableman calls for the "horse doctor" will feel that he is called out as a respected professional man to do good, and that he is beyond the suspicion of being asked to use his knowledge to share in a deception or a fraud.

For the instruction of the first year we are as fully equipped as a school can be at its beginning, with but a small museum and the rough edges of the various parts of this educational machine still unworn.

For the second and third years we are not yet prepared, and we depend upon your generosity and that of your neighbors to complete this department. We have here such a piece of ground as is unobtainable in any other large city in the United States, and if we take advantage of it before it is appropriated to other needs we will have an establishment equal to any in Europe. We

need stables for at least fifty sick horses at once, which should be built with the prospect of enlarging in the future. In this hospital we will take sick animals to board, and it in part will be self-supporting, but there will be many animals with diseases tedious to treat, which will be abandoned by their owners, and we need a fund for the support of such cases. There are many cases of disease among the horses of poor carters, which are readily curable, but the owner cannot afford the fees of a veterinary surgeon, nor the expense of an animal standing idle and eating the food which its work should be paying for; these are the cases which furnish many of the examples of misery that the Society for Prevention of Cruelty to Animals is called upon to alleviate. In many cases the driver is not naturally brutal, but at home there are wife and children to be supported, and the suffering beast is the best he can afford. We need a fund for the support of such animals, which will be judiciously sent us by the agents of the Society for Prevention of Cruelty to Animals, and by the practicing veterinary surgeons of the town. Such a fund will be a double charity—the suffering animal will be relieved, and the knowledge that it can be done without depriving a poor owner of his daily bread will induce the latter to be more charitable himself. We need a cattle dairy of at least fifty cows. This should be largely self-supporting after once established; it will enable us to teach the student practical obstetrics and many of the details of cattle practice of which the usual veterinary graduate is absolutely ignorant. We need dormitories for the students, where those from away can be comfortably lodged, and learn that their alma mater is their home for the time. For our veterinary students who are to give personal supervision to the animals in the hospital, it is essential; for the entire University, it is a necessity. Harvard, Yale or Princeton alumni meet each other like Free Masons and though otherwise strangers, they become rapidly intimate over the past, present and future of their college, because they roomed in the same building, messed at the same table, and had the same associations; this feeling is absent in the alumni of the University of Pennsylvania, except, perhaps, among the medical

graduates, who had their small cliques in their boarding houses. Dormitories will do much to make the university popular, they will tie the graduate's memories to his student life and induce him to take an interest in the future of the institution. We need a botanical garden, and with ample frontage for all our buildings on the sides of this triangle, a beautiful spot is left in the centre for its construction; there exists already a small fund for this purpose left by the late Dr. George B. Wood. We need endowments for the chairs. The chair of surgery must be filled before the next year, and we should be untrammelled in our choice and be able to select the best talent without being influenced by the pecuniary value of so many students.

In fino, gentlemen, we need, and I am sure we will have, your support for this undertaking.

NEW DISCOVERIES IN CERTAIN CONTAGIOUS DISEASES, TUBERCULOSIS, ANTHRAX, RABIES.

BY PROF. A. LIAUTARD, M.D., V.S.

(A Paper presented at the Annual Meeting of the United States Veterinary Medical Association.)

Mr. President and Gentlemen:—Science, it may safely be affirmed, has, obviously, no exclusive nationality. Her genius is thoroughly cosmopolitan, and though different countries may partially appropriate the fame of their native scientists, and these again may distinguish themselves in special and select fields of exploration, yet, whatever may be the discoveries achieved, they must eventually become the property of the entire scientific community. They become the common possession of the intelligent, beyond the limitations of copyright or the restrictions of the patent.

It is for this reason that I have chosen for the subject of the present paper, those important discoveries which, within a comparatively recent period of time, have rewarded the labors of the investigating scientists of Europe, and that I present myself before you to ask your kind attention to a brief consideration of

certain new facts bearing an intimate relation to the practical duties of our own profession, through the questions of sanitary medicine which they involve.

The days of guess-work and unsustained, though more or less plausible hypothesis, are gone by. The theories of spontaneous growth, of the climateric influences, and the old errors of hygiene, have vanished in the presence of the truths which have become the offspring and reward of close observation and rigid experiment; of microscopic research, and of practical medicine, as tested in the laboratory. And in respect to many and the most important of the contagious diseases, and especially as to tuberculosis, anthrax and rabies, it is in our power, thanks to the works of Koch, of Pasteur, of Chauveau, and others, not only to know their true nature, but also to apply, at least to the last two, positive prophylactic measures, the application of which lies within our own domain of veterinary medicine.

Allow me then to offer a few remarks upon the new facts which concern these three affections.

My first reference will be to tuberculosis, that protracted, insidious and fatal disease, which every year terminates so many human lives, and destroys, besides, so large an amount of valuable property in its animal victims, and upon which so much has been written; which has been attributed to so many specific originating causes; whose contagious nature has been so well demonstrated by Professor Villemin first, and subsequently by Chauveau, Koch, Toussaint and others; and which is now well understood as to its cause and nature, through the invaluable researches of Koch and Toussaint. To whom belongs the priority of the discovery is a question still in doubt. In 1881 Toussaint described "a mass of granulations" which he had observed on the field of the microscope, in examining tuberculosis cultures, and he formed the judgment that these granulations were the agents of virulency. These were small micrococci, which presented themselves in the liquid, either isolated, germinated or disposed in varying series of five, six, ten or more.

At a later period, however, Koch published the result of his observations, and in his view, these agents became a bacillus, pre-

senting itself in the forms of rods or bagnettes, morphologically like those of anthrax. In these he saw the cause of the lesions which are always found, and which can be discovered and made evident by various manipulations, and they are of such value that they become the only means by which the true type of tuberculosis can be determined.

Whether the parasite of this disease, like that of anthrax, can be found under two forms, that of true bacillus, as made out by Koch, and that of spores as by Toussaint, are facts which will serve to settle the question of priority of title in the claim to the credit of the original discovery. However this may be, it is to-day admitted, and to all appearances, until proof is brought to the contrary, with justice, that Dr. Koch of Berlin was the first one to prove, not only its existence, but its presence in the various tissues and secretions of the body, where tuberculosis deposits are found. We all know that lesions are often discovered at post mortem examinations, which in their general appearance assume many of the characters presented by tuberculous deposits, but have only an external resemblance, and are not the true, but have, as they have been determined, the "pseudo" tubercles. For example, the different varieties of helminthes which in sheep, cattle, horses and other domestic animals produce the peculiar disease known as *bronchitis vermicularis*, also produce in the lungs, minute tumors, tuberculous in appearance, of pale yellow color, slightly greenish, and of various sizes, in which microscopical stronglyli, either isolated or rolled together in numbers, are found. These are really pseudo tubercles. In glanders, and in the pathological changes accompanying an embolism of the pulmonary artery, the tumors found of tuberculous appearance are all of the pseudo variety. Their true nature is proved by the absence of the bacillus of Koch.

True tuberculosis is then a parasitic disease, and we owe to the establishment of this fact, notwithstanding its insidious form, and its slow and latent progress, that its diagnosis can be positively established, simply by the presence of this little parasite. It now matters no more that the symptoms may not yet be well marked. There is no longer any possibility of a failure in the

diagnosis. All uncertainty disappears the moment the microscope reveals the bacillus in its natural condition.

What important discoveries are these, not only to the physician, but to us veterinarians! I have said that the contagious character of the disease from man to animals, and from animals to animals, had been proved. We know that the feeding of animals with the tuberculous matter either of man or animals, has been followed by the development of the disease. We also know that inoculation has produced it, and though I am not aware that as yet any positive evidence has been recorded of contagion to man by feeding on tuberculous products of animals, we can understand and believe, however, that it may take place. One of our members, Dr. Peabody, has informed me of a case of undoubted contagion, in a child who died in Providence some years ago, from tuberculous meningitis. The father of the child had a cow, whose milk was used as food for the little one; the cow having subsequently died, a post mortem examination revealed extensive tuberculous lesions of the lungs. Without doubt her udder was also diseased, and I have no doubt that the child was inoculated through the milk with the disease which carried him off.

In the presence of facts like this, and with our present knowledge, obtained by the experiments instituted and recorded, what must be our obvious duties in the case? Must we not prevent the keeping of animals thus affected, and prevent the use of their products? But to do this, must we not be sure of the correctness of our diagnosis, and while admitting that tuberculous animal food cannot only produce tuberculosis in other animals, but in man also, must we not be certain that the victim we are about to condemn to destruction is truly tuberculous?

The discovery of Dr. Koch has already proved itself highly beneficial in human medicine, and I have already published an article in a recent number of the *AMERICAN VETERINARY REVIEW*, explaining the method of applying it to veterinary diagnosis by Professor Nocard of Alfort. He had several cows upon which he had pronounced a verdict of phthisis-pulmonalis, and the examination of the sputa of these animals under the microscope

confirmed the correctness of the diagnosis, the bacillus being present in the lesions found at the post mortem investigation. The same diagnosis made upon another animal was proved to have been erroneous by the absence of the bacilli of Koch from the sputa, and the corresponding absence of true tuberculous lesions, as proved by the antopsy. As many of us in this assembly may not have the article referred to, I beg to describe briefly the manipulations required by which the bacillus of tuberculosis can be rendered evident in any specimen in which it exists in nature.

The solution of Erlich, which is used, is made by shaking firmly 100 grammes of distilled water and 40 grammes of oil of aniline, with a saturated aqueous solution of oil of aniline, and filtering the whole. Of this, take 100 grammes, with 1 cubic centimetre of a saturated alcoholic solution of fuschine. A shade of mucosity is spread in a thin layer between two glasses; each of these is then rapidly passed two or three times through the flame of an alcoholic lamp, to dry and coagulate the albumen.

A few drops of the solution of Erlich is then poured into a watch-glass, and over the surface of this liquid the glass thus prepared is placed in such a manner that the side on which the mucosity is shall be in contact with the coloring matter. The duration of this contact is from 12 to 24 hours, if one operates under the ordinary temperature; or it may be reduced to 15 or 20 minutes, if the watch-glass is placed over an alcoholic lamp and left until a slight vapor begins to show itself on the surface of the liquid.

The colored glass is then washed with distilled water, dipped into a solution of nitric acid to the third, just the time necessary for all coloration to disappear. This time varies, according to the thickness of the mucosity dried on the glass, from ten seconds to a minute. The glass is again washed with distilled water, then put for a few minutes into a concentrated aqueous solution of blue of methylene or of vesuvine: washed a last time with distilled water, then dried; the glass, which had taken a handsome blue or marine color, is mounted with Canadian balsam. The bacilli of Koch appear strongly colored in red; all the other

elements of the preparation, cells, nuclei or microbes, have a blue or brown coloration.

Gentlemen, these are already grand results. It remains for us, however, to learn how far, in the more practical point of therapeutics, the discovery may be useful to mankind, and until then, and especially for us veterinarians, the works of Pasteur, Chauveau, Arloing and others, in relation to other diseases of our domestic animals are probably of greater value and importance.

The history of anthrax is too well known to us, for to make it necessary for me to treat it very largely. Looking back for centuries, among authors of works on animal husbandry, we find this disease described more or less accurately. Its existence is acknowledged in all parts of the globe, and we know that our own country is not exempt from its presence. But what a difference appears between the anthrax of times past and that of our modern epoch—between that of those days and that of to-day! And what distinction must we make between what was called anthrax, anthrax-fever, splenic apoplexy, gloss-anthrax, black-leg, black murrain, and what not else, and that which to-day we are mentioning under the names of bacteridian and bacterian anthrax; a change which is due to the world-famed discoveries of French investigators, at the head of which we must name Pasteur!

This affection, which for years we had been accustomed to consider as a single malady, whose true cause was ignored; whose etiology was surrounded with so many various theories, more or less plausible or fanciful; which presented itself to the observers under numerous and variable forms, but proved almost always uniform in the fatality of its result, is to-day, by experimental medicine, and by investigations in the laboratory, demonstrated beyond a doubt to be two diseases essentially different in their nature, notwithstanding the similarity in their prognosis and appearance, and bearing so close a likeness in several of their manifestations. One is known to-day in the scientific world as bacteridic, or the bacteridian anthrax; the other is the disease of bacteria, the bacterian anthrax, and corresponding, the first to

anthrax proper, carbunculous fever; the second to symptomatic anthrax.

The first is due to the presence and the development in the body of an animal, of a small individual parasite, ærobic in its nature—that is, living at the expense of the oxygen of the body—a bacteridie; the second being also due to a small creature, a bacteria. But these individuals are so different in their nature, that if the first one is introduced in the general circulation it gives rise to an affection sure to be fatal in the end, while the second treated in the same manner produces merely a slight and temporary disturbance, and besides this imparts to the animal experimented upon an immunity which protects him against direct inoculation. Death, or at least serious accidents, occur only when the bacteria or the liquid that contains it is introduced into the meshes of the connective tissue, in which it finds elements for rapid proliferation, and produces its fatal effects.

These facts are the results of experiments made by Messrs. Arloing, Cornevin and Thomas, and published in their excellent monogram on bacterian anthrax, for which they received the prizes of the Académie des Sciences and that of Société Nationale d'Agriculture of France.

The first discovery of the true element and life of the bacteridie is due to Pasteur. Arising at first, it may be said, as a result of his numerous researches on the subject of fermentation, they brought him later to prove the true nature of those contagious diseases which by degrees are coming to be classed under the more positive name of parasitic affections, and amongst which various affections of the silk worm, the pebrine and the flacherie, septicæmia, chicken cholera, hog cholera, etc., have been placed.

The second discovery, that of the bacteria of symptomatic anthrax is, so to speak, but the consequence and fruit of the first. But with both discoveries a series of investigations and researches brought this great chemist and his followers to another of no less importance. I refer to the prophylaxy of these diseases. And it is thus that to-day we possess the same means of prevention against them that the human physician has at his disposal for the protection of mankind from that terrible scourge of our race,

small-pox. If, then, to Jenner we owe the grand process of vaccination against small-pox, to Pasteur, Arloing and their co-workers we owe the vaccination of both species of anthrax, as well as the bacteridian as the bacterian form.

The time is too short for me to recall to your mind all the writings that have been published on these subjects, or to detail the successful experiments that have been reported, as well as the failures that were against them. It is now an admitted fact throughout the world, and demonstrated in every portion of the continent of Europe by hundreds of thousands of living witnesses in the forms of the animals whose lives it has saved, that vaccination, if we may use that word, is the grandest thing resulting from these modern discoveries. I use the word vaccination, as, to quote the expression of Pasteur and Bouley, it is a true vaccination. It is the introduction of the modified virus, of the attenuated virulent element, which is just changed into vaccine by the peculiar manipulations of the laboratory, which though they diminish the strength of the virus, do not remove its entire vitality, since when placed in favorable circumstances, it is likely to return to its former condition and become as dangerous as before.

As the two forms of anthrax are quite common in various parts of this country, and satisfied, as I am, of the benefit to be derived by vaccination, I thought it might be of interest to present this meeting with the material used, as well as to say a few words on their application, it being understood, however, that in relating the process of application, I have no wish to ignore other methods, but present these as being considered by me, at present, as most practicable, and with the hope that some amongst us will be pleased to try them either as a mere experiment or in actual practice.

The process inaugurated by Pasteur is based upon this principal:—that when an animal has suffered from a mild attack of anthrax, he is protected at least for a certain time by an acquired immunity, and has become refractory—and if the attack of the disease is produced by the introduction under the skin of bacteridies, ttenuated in heir virulency, the subject is also protected,

and cannot be killed with anthrax, at least for a certain time whose length is now determined to be from 18 to 20 months.

This being established, and in order to avoid giving the animals a disease which might prove fatal for some, two protective inoenuations are made. The first is with a very attenuated bacteridie, the first vaccine, which give to the animal only a very slight fever, characterised by a rise in the temperature; the second, made twelve or fifteen days later, with a more virulent bacteridie. It is the second vaccine which would kill a certain number of animals, were they not already partially protected by the preceding vaccination. But this partial protection exempts them from all infection beyond a slight fever, and when relieved of this the animals are perfectly vaccinated, and have become entirely refractory to the disease.

The liquids of inoculation are delivered in closed tubes, and are introduced with the syringe of Pravaz. The first inoculation is made on the inside of one leg in sheep, and on one side of the neck or of any part of the body where the skin is thin in other animals; the second being introduced on the opposite leg or side. The rod of the syringe is divided into a given number of parts. For sheep the quantity to be injected is indicated by each one of these divisions, the dose for the large animals being double. In this way one will see that a syringe full which may serve to operate on eight small, will serve but four large animals. It is of the greatest importance that the instrument should be perfectly clean, and for this reason it is better when not a new one, and when it has already been used, to have it thoroughly cleansed and heated whenever a new operation is to be performed. I present you with some of these tubes, which I have had recently imported for this occasion. I understand the liquid has to receive a special preparation when exported from Europe. It will, no doubt, be very interesting to all to see the trial made, and the result made known.

This is the process of vaccination for anthrax proper—splenic apoplexy. But as this disease differs entirely from symptomatic anthrax, gloss anthrax, black leg, etc., etc., the process which protects from the attack of the first disease will be without result

for the second. To prevent its development a special vaccine has to be employed. Here are samples. As you observe, there are, again, two kinds or degrees of vaccine substance, one much reduced in strength, the other less so. How are they prepared? By exposing the virus, taken from carbuncular tumor, at various temperatures. One has been exposed at 100° heat, the other at 85° . The first gives and the second strengthens immunity in sheep and cattle. Both of them must be introduced at an interval of from five to eight days.

To operate, a hypodermic syringe of the capacity of five cubic centimeters (a little more than one fluid drachm) is necessary, having a divided rod, in order to make the piston of the syringe to contain a given number of doses.

The contents of one of the papers of prepared vaccine, that which has been exposed to a temperature of 100° , is placed in a mortar which must have been carefully cleaned by being passed through boiling water. Upon this powder two or three drops of water are poured and it is triturated, water being added to it until about ten cubic centimetres (or two a half fluid drachms) is used, that quantity being sufficient to dissolve the vaccine. The operator has then a brownish liquid, which is then run through a linen sifter to remove any soft particles that may have escaped trituration. The sieve must first have been moistened, so that the amount of liquid solution of vaccine after filtration is about ten cubic centimetres, or a sufficient quantity to fill up the syringe twice.

The operation is simple. It having been demonstrated by experience that the tail is the best spot to vaccinate, it is done as follows: The hairs of the lower end of the organ being cut short, upon a given surface, and this being carefully washed off, a little cavity is made with a small trocar under the skin in such a way that when the tail hangs down the cavity is turned downwards. The syringe is then introduced into the opening made by the trocar and the necessary quantity of liquid, from ten to fifteen drops, according to the age of the patient, is slowly and carefully introduced. A slight pressure upon the opening will afterwards prevent the exit of any portion of the injected fluid.

A second vaccination is performed some ten or thirteen days after, a little behind and on one side of the first, carefully following the same method.

The result of these manipulations will be a state of immunity. Inoculations performed some days afterwards with the strongest virus will fail to produce any bad result, and this protection against the disease will last for a length of time extending several months.

Grand and beneficial as these results are in the various points of view from which they may be considered, I do not know if they are not surpassed by those already obtained in relation to another disease, hydrophobia.

This disease, so terrible in its aspect and results, so treacherous in its development, and so insidious that its name alone is almost a synonym for a frightful death, has now lost a great deal of its character by the recent discovery which we also owe to Pasteur and to his collaborators. And when we consider that we are on the point of mastering it, of protecting from its attacks an animal which is often almost a member of our households, and thus in many instances of protecting ourselves, and perhaps preventing its development in the unfortunate human being who may have become inoculated with it, I cannot help repeating it, the question must present itself, which of these two discoveries of Pasteur, that of anthrax or that of rabies, will be the more beneficial to mankind.

Mysterious in its incubation, and so horrid in its symptoms and results, Mr. Pasteur has been studying its nature since 1880, and at last has succeeded in establishing the fact of its parasitic nature, and more than that, of giving by various processes a refractory condition to animals properly inoculated with attenuated virus. I specify the "attenuated," for it has been proved that by the successive passages through given organisms, the virus would lose a certain amount of its virulency and, so to speak, become attenuated.

The results that were obtained in his laboratory were accounted to be so important that a committee of scientists were appointed to test them. What were those results? Firstly, the

fact that the virus could be attenuated, and secondly, that dogs could be rendered refractory to rabies, just as other animals may be rendered refractory to anthrax by vaccination, and as mankind is rendered refractory to small pox by a similar operation.

The Commission reports :

“ We are happy to bear witness to the truth of the fact advanced by Mr. Pasteur. Yes, science at his hands has solved the important problem rendering the dog refractory to rabies by the preventive inoculation of an attenuated virus of that disease, as it has already succeeded by an identical process to give the organism of sheep a complete immunity against anthrax. There can be no longer any doubt about it. All the dogs that Mr. Pasteur has shown us as refractory, by the immunity given to them by him, have stood the experiments of inoculation to which they were submitted, with the strongest virus and the most certain known manner, while most of the dogs used as witnesses, or those which were submitted to the same experiments without having first been protected against their effects by a preventive inoculation, did not resist them and have died with rabies.”

Of the value of these results we veterinarians will be able to judge appreciatively, and we shall, no doubt, take advantage of them. Of course, much remains to be done. This is only one first step, and it most probably means the ultimate slow stamping out of hydrophobia ; this, perhaps, depending also on the duration of the immunity. This is yet to be studied.

Mankind is protected from small pox for a number of years by vaccination, and cattle from anthrax for months, but how long this immunity of dogs against hydrophobia will continue is a question that cannot yet be answered.

But this is not all. The Commission has another important question to solve, partly presented by Mr. Pasteur, and which was suggested to him by his observations on the animals upon which he has experimented. It is that of the prophylaxy of the disease in mankind. It is to know whether after a bite has been inflicted, the preventive action of the inoculation with the attenuated virus can be efficacious in destroying the effect of the inoculated virus when introduced by a wound.

Experiments upon animals in the laboratory seem to solve this question in the affirmative. But before it can be applied or tested on human subjects, many positive facts will have to be presented in order to justify its application in human medicine.

Let us hope that at a date not remote the dreadful fear of hydrophobia will no more exist, and that once again science will have succeeded in mastering and in remedying another of those contagious scourges which have made such fearful havoc amongst men and animals.

EDITORIAL.

CHICAGO CATTLE RAISERS' CONVENTION.

The immense value of the property embodied in the live stock of the West, and the extent and imminence of the dangers to which it has in late years been exposed, has excited a degree of anxious interest in those whose fortunes are involved in this branch of trade, which was sure to lead to the discussion and settlement, sooner or later, of the vital and practical questions naturally suggested by the experience and the necessities of the community of stockmen. It has for some time been evident that the period for this could not long be postponed, and the matter has at length culminated in a convention of cattle raisers, who assembled in Chicago on the 14th of November. This meeting was the result of a suggestion originating with Mr. Thomas Sturgis, Secretary of the Wyoming Territory Cattle Association, and was attended by some two hundred representative stockmen. A number of prominent veterinarians were also in attendance as delegates and in other capacities, among whom Drs. J. W. Gadsden, of Philadelphia; J. D. Hopkins, of Cheyenne; E. Salmon, of Washington City; W. H. Paaren, of Chicago, and others, are mentioned. A number of interesting papers were read by these gentlemen, and the respectful attention with which they were received by the convention gave ample proof of a well-merited appreciation of the value of the suggestions which the professional training and experience of the authors had qualified them to offer.

The subjects principally discussed were Pleuro-Pneumonia, Veterinary Sanitary Medicine, and the labors of the Bureau of Animal Industry. It is to be regretted that Professor Law, whose deep interest in all questions relating to the institution of sanitary measures in this country, was not present. He was represented, however, by a letter, which was read before the convention, embodying some severe, and, perhaps, not unmerited strictures upon the labors of the Bureau of Animal Industry. We notice some excellent suggestions in this letter, and especially commend his views where he writes: "As I am now in a position to speak without laying myself open to the charge of possible personal interest, I will further suggest that the convention should urge, in all States and Territories, the appointment of a State Veterinarian, whose duties, besides attention to all outbreaks of contagious diseases in animals within the limits of his jurisdiction, should be to keep up a supervision of animals imported in the State." This suggestion is one of which we have all for a long time thought favorably, and which we must hope will not be longer overlooked in legislation.

We are not yet prepared to say to what extent veterinarians may expect to be recognized or affected by the terms of the contemplated organization, if the labors of the convention should result in its formation, but we have no doubt that some of our enterprising colleagues, if given the opportunity, will be sure to make themselves felt in its operation, and prove their ability to contribute valuable service by the practical application of their experience and skill in the laws of sanitary veterinary medicine.

ONLY A FEW CASES OF PLEURO-PNEUMONIA IN THE UNITED STATES.

We have called the attention of our readers, in several of our recent issues, to the difficulties which were sure to be interposed in any attempt that might be made to compass the stamping out of pleuro-pneumonia. They were to arise, among other causes, from the difference of opinion on the part of certain veterinarians in the Eastern States who denied the existence of that

disease, especially amongst the cattle of the State of New York. Until recently the expression of this opinion has been confined to the local newspapers, but we now find it copied in the Western papers. The *Chicago Evening Journal*, in publishing the report of a meeting of veterinarians held in that city, says: "A meeting of unofficial veterinary surgeons has been in progress in Chicago during the week. It has been attended by a large number of the most skilful and experienced members of this profession that the country contains. At one of their sessions the question of pleuro-pneumonia was discussed, and the prevailing opinion was expressed that but *few cases of this disease had ever existed in the United States*, and that the cattle slaughtered under the humbug pretense that they were affected by it were suffering from merely ordinary complaints." This article refers probably to the meeting of the so-called "National Veterinary Medical Association," and has undoubtedly been taken from the set of resolutions which follow, and which we publish to show the objects of those who issued it:

To all interested in the welfare of live stock:

At a regular meeting of the National Veterinary Medical Association, held at the Sherman House, Chicago, Nov. 11, 1884, composed of delegates representing the different State organizations, it was resolved that some official action be taken by this organization looking forward to legislative action for the better protection of live stock from diseases of a contagious type, by *calling the attention of Congress to the advisability of appointing properly qualified veterinary surgeons to official positions*, and believing that stock raisers and the general public are not fully aware of the extent of diseases of a contagious nature, that are transmissible from one animal to another, and from animal to mankind, and vice versa; and it being the especial province of the educated veterinarian to deal with disease in its various aspects, particularly so in preventing the spread of the same, as well as relieving those affected;

Resolved: That we ask the hearty co-operation of all stock growers, agricultural societies, and all persons interested in the live stock interests of our country in furthering this object in view.

Great numbers of valuable stock, as we believe, have been lost through lack of proper treatment, which might have been saved if treated by properly qualified practitioners, who could discriminate between diseases of a contagious and non-contagious character, which discrimination would be a financial benefit to all concerned.

This being the sense of the meeting, that copies of the above be drafted and presented to all interested in the welfare of live stock.

Believing that by concerted action only in a matter of such grave import it would be advisable for the appointing power to confer with the National Veterinary Medical Associations, and the various State organizations of which it is composed, as the best means of accomplishing what is desired, namely, the better protection of live stock from contagious diseases.

Respectfully,

DR. R. W. FINLAY,

President of the New York State Veterinary Medical Association and
Veterinary Editor *Spirit of the Times*.

T. BENT. COTTON, V.S., Ontario,

Second Vice President Ohio State Veterinary Medical Association.

A. H. BAKER, V.S., Montreal,

Principal of the Chicago Veterinary College; Veterinary Editor of
The American Field and *The Chicago Horseman*

LOUIS A. GREINER, SR., V.S.,

Delegate of the Veterinary State Association from Indiana.

(The italics are ours, but we are thankful that the syntax of the circular is not.)

The impression which an uninformed reader would receive from the above must necessarily be that so far no "properly qualified veterinary surgeons" had ever been appointed to official positions; that the work done by Professors Law, Salmon, Paaren, McLean, Lyman, Miller, Gadsden, Michener, Hopkins and many other has been out of their province; that they were not "veterinarians educated to deal with disease in its various aspects," and especially such diseases as those which they have actually treated; and that the report of Dr. Loring before the cattle convention, where he reported that 560 cases had been condemned in the States of New York and New Jersey and the District of Columbia, must have been at least exaggerated, inasmuch as only a few cases of this disease had ever existed in the United States!

This question of pleuro-pneumonia has already brought the veterinary profession of America before that of the whole world in rather a ridiculous light, and the effect of new publications like this will certainly not improve the condition. We must have been laughed at. What next?

THE COLUMBIA AND AMERICAN VETERINARY COLLEGES.

We promised, in the November number of *THE REVIEW*, to present the profession with an answer to the accusation made in a communication printed in the *Journal of Comparative Medicine*.

Having, on further consideration, thought proper to refer the matter to the President of the Board of Trustees of the American Veterinary College, these gentlemen, after consultation, have asked us to publish the following letter, addressed to the editors of that journal:

To the Editors of the Journal of Comparative Medicine:

GENTLEMEN—The communication in the last issue of your journal relative to the Columbia Veterinary College, has been brought to my notice.

In reply, I would say that, from papers presented to me at the time of the transfer to the American Veterinary College of all the privileges and charter of the Columbia, including resignations, resolutions, &c., there is no doubt as to the final extinguishment of that institution, and that an attempt to re-establish the institution or to reinvest it with corporate powers, on the part of those who have pretended so to do, will, if persisted in, pave the way to serious complications, and result in discomfiture to any one attempting to continue in such a course. I shall be pleased to show you the proofs of the above statement, and hope to satisfy you of the veracity and propriety of our action in the matter.

Respectfully yours,

SAMUEL MARSH,

President of the Board of Trustees, American Veterinary College.

REPORTS OF CASES.

LACERATION OF THE LONG WASTUS MUSCLE—FRACTURE OF THE TIBIA.

BY W. H. PENDRY, D.V.S.

I was called some distance out of the city to see a bay gelding, eight years old, about fifteen hands high, said to have a dislocation of the patella. On my arrival at the stable I found the animal in a loose box, and at once saw that my information as to the trouble was incorrect. At first sight, I at once came to the conclusion that I had a fracture in the upper portion of the near hind leg to deal with, and so examined for that trouble; I tried to get the horse to move, but he refused to go a step unless actually forced, and a few minutes' examination soon convinced me that I had no ordinary case of lameness. There was apparently little or no swelling, hardly any increased heat, but the slightest pressure about the middle of the femur gave great pain. I proceeded to get the history of the case,

which was as follows: The present owner had had the horse about one month, having bought him for a fast road horse, for eight hundred dollars, having got a record of about 2:40. About ten days before the day I was called, he started for his usual drive, when, on leaving the stable, he found the horse went *slightly* lame. He drove for three or four miles, when he got so dead lame that he was left at the first stable that could be reached; some liniment was got and applied to the parts that seemed affected, and in about a week the owner found him so much better that he told them at the stable to turn him out. They did so, and as soon as he reached the grass the horse got down and had a good roll, and when he went to get up he had difficulty in doing so, and when up was on three legs. After reviewing the history and a further examination, I came to the conclusion that there was either an incomplete fracture of the subtrochanterian crests of the femur, or a laceration of some of its attachments, which of the two I could not satisfy myself, and so informed the owner, stating at the same time the treatment in either case would be the same, viz.: perfect rest of the parts, and blistering. I was instructed to treat the case as I thought best. I at once secured a sling, into which I put the horse, applied a cantharidis blister, and left him, after giving instructions as to management. Everything was apparently going along all right, when, on the 14th, I received a telephone message to come at once, as the horse had got down, and his leg was broken; I at once went there and found him slung all right, but his leg was broken sure; the inferior extremity of the tibia was badly fractured. I at once destroyed the horse and took advantage of the circumstances—unfortunate or otherwise—to satisfy myself as to the exact original injury. I made a careful incision along the line of the femur carefully laying back each muscle as I cut through it, I arrived down to the external face of that bone; it appeared to be all right, and so with its third trochanter, but I noticed there was a dark coloration just behind it, and on further dissection found there had been considerable hemorrhage, there being large ante-mortem clots. I inserted my finger into the muscle attached, and found it tore very easily. I dissected still fur-

ther and found I had a laceration of the anterior portion of the long vastus muscle. The interesting question is, could this injury have been the cause of the first slight lameness, resulting in excessive lameness while driving, there must have been considerable violence to have caused it, and I think beyond a doubt, the most was due to the kicking while rolling; but did the trouble originate then? I think not. Some weakness was caused by a breaking away, which, no doubt, with proper treatment, could have been repaired; but, in my opinion, it is quite a question whether any treatment would have been successful after the second injury. After the post mortem, I gave it as my opinion that the injury discovered could not have been successfully treated, yet claimed I was justified in recommending treatment such as I did.

I ought to say that it was no part of the sling proper that gave way and let the horse down, but an additional part added by the parties at the stable, out of kindness, in trying to make the horse more comfortable.

6 MULTIPLE CAUDAL ABSCESSSES AND FISTULOUS TRACTS CAUSED
BY INGROWING HAIRS.

BY W. H. GRIBBLE, D.V.S.

I would like to ask my fellow members of the veterinary fraternity if they have met with cases that correspond with the following:

Case.—No history whatever; a bay colt, very large for its age, was brought to me with a large swelling at the base of the tail. At the lower part of the swelling, at about where the hair of the tail proper commences, was a small opening, discharging a very little pus, and obtaining fluctuation at the swelling. I concluded it to be an abscess, that had been discharging from the opening mentioned and had become plugged, giving rise to the enlargement by accumulation of pus. I found that the pus was contained in several sacs, each of which was lanced, and a seton passed through to secure drainage, and the animal taken home. In a few days it was returned with a hard swelling about six inches below the one already mentioned.

The owner now called my attention to a curiosity, which was that, about fourteen inches below the opening I have spoken of, there seemed to grow out of a depression a bunch of white hair about as large as my finger, very closely packed together, and each individual hair much coarser than the black hairs of the tail. I pulled a few of these and found they appeared to withdraw fully an inch from the tail, whereas the root proper was as any other hair. Concluding there must be a sinus, I pulled out the white hairs, inserted a probe, which passed to the opening fourteen inches above. Obtaining the consent of the owner, the sinus was opened, when imagine my surprise to find white hair growing in it from one end to the other, the hair of the upper part reaching nearly to the bottom, I having pulled out all that had passed through. Dissecting an inch of the upper part, took hold of it and stripped off the whole in one piece, sewed up wound with wire interrupted sutures, sent animal home and have not seen it since. Now, what caused the fistula? The owner says there had been no swelling to his knowledge until brought to me; no discharge of pus from where the white hairs were; these last, he first noticed some six months past.

My opinion is, that there was an injury received, pus formed and infiltrated between the superior coccygeal muscles until it reached a weak spot in the skin of the tail and there found exit, continued discharging until a fistula with indurated wall was formed, became plugged superiorly, and the pus then made discharged from the opening mentioned, when I saw it, then it again became stopped above this opening and caused the swelling. But, now, what caused the formation of white hair the whole length of the sinus, from where came the hair follicles to produce this hair? At its superior part it was probably due to the turning of the skin and the hair becoming bleached by growing through the sinus. As nature produces no hair on parts that have been destroyed, even by a strong blister, then how could she produce it on parts that had not been covered with skin? or could this fistula be present at birth, and the swelling and pus at the upper alone be due to injury?

REVIEWS.

ANIMAL CASTRATION, by A. LIAUTARD, M.D., H.F.R.C.V.S., etc., etc.
(Wm. R. Jenkins, New York, and Balliere, Kindall & Cox, London, 1884.)

This concise and complete little book of 148 pages is a veritable godsend to the veterinary surgeon and to the *rural economist*, in these days of superstition, when animals are still gelded at the wane of the moon, and educated veterinary surgeons *buy* "secrets" of "difficult operations" from self educated gelders, whose long practice has simply made them expert in performing what any good anatomist should do. Professor Liautard commences with a short review of the early history of castration, and designates the causes which demand the operation. He calls attention to the change of form which gelding produces in the development of the animals, but might, perhaps, have laid more stress on the value of this change in selecting the age at which an animal is to be castrated, so as to remedy defects of breeding, and reduce or increase the proportion of development in the fore and hind quarters, and adapt the animal to the use for which he is intended—draught, hunter, etc. The author leaves the question of age of the animal and season of the year at which castration is to be performed entirely to the discretion of the operator. After the preparation of the animal as for any surgical operation, the author compares the merits of operating standing or after casting the horse, he calls attention to the risk of injury in casting young animals being nul, while the risk of struggles in the standing animal, the pulling of the spermatic cords, predisposing to champignon, formation of hernia, etc., is great, and says, "we submit the point to the intelligent judgment, whether in the presence of the possibilities of extremely dangerous accidents, it does not become the duty of the veterinarian to prefer the mode of securing this patient in the supine position, both in his own behalf and that of his employer." The anatomy of the inguinal region and of the testicular organs is clearly treated, and the understanding of it is aided by several good plates through the book.

Three methods of operation are given: 1. Section of the cord immediately after opening the envelopes of the testes, which includes "scraping, tearing, torsion, linear, crushing, by the ecraseur and firing by the actual canterbury." 2. Slow section by the ligature and clamps. 3. Crushing and double twisting without opening the scrotum—bloodless.

These various methods are treated in detail, and special point is made of the dangers of each, and their application to different species of animals and to individuals. A number of cuts show the instruments used in torsion and the method of applying them, and will favor the introduction of a useful operation for young animals, too little employed in the United States. The ecraseur, House clamp and clamps for firing, are each described and pictured. The method by clamps, and especially the covered operation, are described at length. Dr. Liantard believes that the safety of the operation by clamps more than compensates the owner for the second visit of the veterinary surgeon, which this method necessitates. The several operations for castration of cattle and other animals are described, and some of them may prove new and interesting to the American practitioner. It is to be regretted that Dr. Liantard has not devoted more space to the anatomy of cryptorchids, which he was so especially fitted to do. Three good plates give the types of the hidden testicle. The ordinary sequelæ of the operation, the mode of healing and needed care of the animal are briefly reviewed. The complications are thoroughly reviewed, commencing with the minor accidents of colics and tearing of clamps; detailed attention is given to champignon, but more would have been acceptable in the chapter on hernia. After reviewing the merits of the various methods of castration, the author decides for that of "castration by clamps," "it is easy and quick in its performance; performs the most certain hemostasis upon the artery, and notwithstanding some slight objections, merits a preference over all others."

The chapter on castration of females will be a novelty to many Americans, and will remind others of their neglect of one of the valuable operations in veterinary surgery, which, in Europe, is a source of great profit to the dairyman. After a few words

on the merits of the operation and the conditions favorable to it, Dr. Liantard describes the anatomy of the genital organs in the cow and mare, and aids the description by plates, giving also plates of the instruments used in the various methods. Spaying of the sow—bitch are described, but only the lateral operation in the latter, no notice being taken of the valuable medium operation; the chapter ends with the castration of cocks, accompanied by a good plate. The only regret felt by the veterinary reader of this well-worded and accurate book, will be that there is not more of it, while the farmer and owner of animals will find it interesting reading, and will learn that while castration is a comparatively simple operation, it may be attended with great dangers, and that it requires all the care and knowledge that should be given to any surgical operation that is always attended with danger.

HUIDEKOPER.

ART OF TAMING AND EDUCATING HORSES, by D. WAGNER.

This large volume of over 1,000 pages is divided in a number of chapters which treats of the various means by which the education of horses, so far as taming and breaking is concerned is handsomely treated and presented to the readers in such a manner that after reading them, every one will feel thankful to the author for the large amount of information which is collected in the first twenty chapters of the book.

For us veterinarians, however, we cannot but regret that the work does not stop there, and we would certainly have considered it of much greater value had the part which treats of diseases and of their treatment been omitted. We have already too many of those works, "every man his own horse doctor," and we too well know of their little value to say any more of this new addition.

Mr. Wagner deserves, however, great credit for the researches he must have made to collect the material he offers in his book, and though the great majority of the plates which illustrate it are reproductions from others, they are so handsomely printed that their examination will gratify the most particular. We hope

“ Art of Taming and Educating Horses ” will find a large sale to repay the author for all the labor he must have done to complete it.

PHYSICIANS' VISITING LIST FOR 1885, (H. Blakiston, Son & Co.)

This forms a small *porte feuille*, which not only answers the purposes of the physician, but suits also very well those of the veterinarian. Each page, representing the attendance of the week, gives room to record twenty-five patients, a number which, if necessary, can be increased to fifty by the purchase of an interleaved list. It is as compact and complete as it can be made, and is equal, if not superior, to all others.

SIMPLE AILMENTS OF HORSES, by W. T. (Cassell, Petter, Galpin & Co.)

It is to be regretted that the author should have seen proper to abbreviate his name in signing this peculiar form of vade mecum, in which the diseases are treated in alphabetic order. It is concise, written in his peculiar manner, and will prove an interesting subject for those who will carefully read it. The subject of operations and the concise list of prescriptions which completes the work render it still more useful.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular meeting of the New York State Veterinary Society was held at the American Veterinary College, New York, on Tuesday, October 14th, 1884, at 8 p. m., the president, Dr. Liantard, in the chair.

Members present were: Drs. Burden, Coates, Robertson, Liantard, Dixon, Burget, Michener, Bretherton, Bath, Pendry, Ryder, L. McLean, Charum and Allen; Dr. Miller, of Camden, N. J., being present on invitation.

Minutes of last meeting were read and on motion adopted.

The essayist of the evening, Dr. Charum, then read a paper on Insolation, which more particularly spoke of those cases of sunstroke that had come under his notice, giving the result of his particular treatment in each case, some of which he had treated with sedatives, others with stimulants. The paper did not seem to satisfy Dr. L. McLean, who wanted to know what real or special disease the essayist had reference to, what was his reason of giving in one case sedatives, and in another the opposite, and with his usual persistency, pressed him for minute particulars of the disease he had reference to, wanting the pathology in the different stages, etc. Dr. Charum gave a general answer, in which he stated he had not had the opportunity to make post-mortems in the cases he had treated, and so was unable to give the lesions; he had simply treated symptoms. Where there was excessive prostration and loss of vital power, he had used sedatives, and where the pulse hard and there was threatened congestion, he had used stimulants.

Dr. Coates said he had one case where the temperature was over 110° F., which recovered under his treatment, which was always stimulants; they were certainly indicated, as there was exhaustion.

Dr. Burden mentioned two cases he lost where the temperature was respectively 110 and 109. He had generally found the temperature very high; his treatment, which was generally successful, was stimulants and injection of cold water. In reply to Dr. McLean, said the disease he had reference to was sunstroke.

Dr. L. McLean said, he considered the term altogether too general. He congratulated the essayist on his successful treatment of "symptoms," and did appear willing to accept his ideas on the subject under discussion as scientific knowledge of the trouble he had been called upon to treat.

In reply to Dr. Bretherton, the essayist said that he would give sedatives where he found the temperature high and the pulse full. In treating cases of sunstroke, he relied mostly on aconite, whiskey and liquor ammonia acetatis, applying cold water to the head and lower extremities; although he had never seen laminitis follow sunstroke, yet he had always found the lower extremities

very hot; he applied ice water to the head when he feared congestion of the brain; and, in reply to Dr. Michener, said he did not think that injections of ice water would have been of service in the cases he had treated.

Dr. Liantard said he thought the Society would have to consider the paper one asking for information more than giving any. The questions asked by the essayist ought to be answered by the chair, if not by individual members. Some were somewhat difficult to reply to, but he thought that if he would procure a copy of the revised edition of *Stoneheuge*, which was published about 14 years ago, in which Dr. Large took the question up, with another, at considerable length, he would find much valuable information. In reference to the cold water treatment he had seen it applied all over the body with very great benefit. He could not see why laminitis should not follow sunstroke; he thought it could.

A vote of thanks was extended Dr. Charum for his paper.

Application for membership was received from Dr. W. G. Hollingsworth, which was referred to the Board of Censors.

Under the head of unfinished business, the secretary reminded the meeting of the question of the proposed legislative bill, which had been laid over for consideration.

Dr. L. McLean said he did not consider the veterinary profession was ripe to advocate any legislative bill, or in a position to oppose empiricism, and would move that the question of legislative law be dropped.

Dr. Pendry considered the veterinary profession was never in a better state to advocate legislative law than at the present moment; the motion and remarks of Dr. L. McLean were not fair to the profession, nor to the gentleman who had drafted the proposed bill, and, in his absence, he would move that the subject of legislation be not dropped, but be made a special order of business for the next meeting. The motion being seconded by Dr. Coates, and there being no seconder to that of Dr. L. McLean, it was put to the meeting and carried.

There being no further business before the meeting, and the chair having appointed Dr. Dixon essayist for the following meeting, a motion to adjourn was carried.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held on October 2nd, 1884. President Zuill filled the chair. On roll call Drs. Zuill, Gaentner, Glass, Hoskins, Campbell and Hance responded. The minutes of September meeting were read and adopted.

The essayist, Dr. T. F. Hance, brought forth the subject of nephritis, dwelling particularly on the pathology of the same, and the great value of the microscope in diseases of the urinary organs, from a diagnostic point. In connection with his remarks a number of slides were shown under the microscope, presenting the normal as well as pathological appearance of the kidneys. He believed that nephritis was more frequently present than diagnosed, though, in this, he was strongly combatted by other members. Many interesting points were brought out, among them the probable connection of edematous limbs and diseases of the kidneys of a functional character.

It being the annual meeting, an election of officers for the ensuing year was held, and the following members were elected: President, W. Horace Hoskins; Vice-President, Dr. T. F. Hance; Secretary and Treasurer, Charles T. Gaentner; Board of Directors, Drs. S. C. Campbell, W. B. E. Miller, W. L. Zuill, T. B. Rogers and Ward B. Rowland.

In a few brief remarks on the past history and work of the Association, the new President assumed the chair, after which a motion for adjournment was received and carried.

W. HORACE HOSKINS, *Secretary.*

CORRESPONDENCE.

HONEST CRITICISMS.

Editor American Veterinary Review:

DEAR SIR.—It is quite evident from official reports in recent numbers of the *American Veterinary Review*, that a great many veterinary surgeons are only too glad and willing to make themselves ridiculous by the indiscriminate and illegitimate appropriation and use of the title "Dr."

Some veterinarians are legitimately entitled to the title of "Dr." because they have been duly graduated from schools or colleges which confer the degree of doctor of veterinary medicine or the degree of doctor of veterinary surgery. Some veterinarians are graduates of schools or colleges which confer the degree of veterinary surgeon.

Therefore, it is a gross injustice, which savors strongly of quackery and fraud, to appropriate or assume and use a professional title which one has no more right to than a maniac or a wild Indian.

It is apparent that some members of reputable veterinary medical associations have utterly disregarded and criminally violated the code of ethics and by-laws of their respective associations. In perusing the veterinary periodicals, and reputable veterinary text-books published in Great Britain, one observes and admires the honesty and modesty of our British colleagues in the legitimate use of professional titles. Is it any wonder (?) that British veterinarians are highly amused, and, perhaps, disgusted with the conduct of their professional brethren in America?

J. A. VAUGH, V.S.,
Vet. Surg. 6th Cavalry, U.S.A.

VETERINARIAN WANTED.

HAMDEN, N. Y., Oct. 18, 1884.

DEAR SIR.—I take the liberty of writing you concerning a veterinary surgeon. This entire neighborhood is sadly in need of one. The nearest men here to attend to calls in that line is a gentleman (licensed), and another who is not. They live eight miles from here. Those men are constantly on the go, and are called off as far as thirty miles, to my certain knowledge.

I have endeavored to persuade some of our young men to go to your place and go through, and I think two will leave here for your college this winter.

Last Sunday night a farmer had several cows affected by a singular complaint, and I ordered one of the stomachs brought to me. Upon examination I found paris green; he has lost four

cows since last Sunday night, and two more look as if they would go too. I am called upon very frequently myself, but knowing that I am not fully competent, am compelled to do what I can, and that is very little. I am a druggist doing business here, and am considered an expert in chemistry, and for that reason am supposed to know more than what I really do. While I cannot guarantee a man just so much business every year, I *will* say, there is an opening here that I do not think exists anywhere else. This is a large farming and dairy country, and the farmers are all well to do, and will pay well and cash. The quicker one will come here the better for all parties concerned. Hamden is a village on the Delhi Branch of the N. Y., O. & W. R. R. If you should know of any one who would like to come, and would like to correspond or come and see himself, I will give him full particulars, and the entire community will be gratified.

Yours truly,

A. ROSENMILLER,
Druggist, Hamden, N. Y.

NOTICE.

The Secretary of the Alumni Association of the American Veterinary College desires the present address of every member of the Association and any information of their work that will add to the history of the Association.

W. HORACE HOSKINS, *Secretary*.

254 South 15th street, Philadelphia, Pa.

NEWS AND SUNDRIES.

Hog cholera has presented itself in the southern districts of Philadelphia, and is causing some very heavy losses. In many cases the symptoms exhibited by the skin are of a most marked type. It also prevails in several other parts of Pennsylvania.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Repertorium der Thierheilkunde, Schweizer Archiv fur Thierheilkunde, Tidskrift fur Veterinarer, Revue fur Thierheilkunde und Thierzucht, Clinica Veterinaria, Veterinarian, Veterinary Journal, Recueil de Medecine Veterinaire, Archives Veterinaria, Presse Veterinaire, Echo Veterinaire, Journal de Zootechnie, Revue d'Hygiene, Revue Scientifique, Gazette Medicale.

HOME.—Journal of Comparative Medecine, Medical Record, Spirit of the Times, Turf, Field and Farm, Country Gentleman, American Agriculturist, National Live Stock Journal, Breeders' Gazette, Science, Scientific American, Prairie Farmer, etc., etc.

JOURNALS.—Polyclinic, Home Farmer, Western Rural, Practical Farmer, Spirit of the Farm, Maine Farmer, Medical Herald, Kentucky Stock Farmer, Our Country Home, Sporting Life, Racine Daily Times, Missouri Republican, St. Louis Globe-Democrat, Chicago Express, etc., etc.

BOOKS AND PAMPHLETS.—Report of the Department of Agriculture of Winnipeg, Manitoba; Report of the Kansas State Board of Agriculture; Précis di Policé Sanitavie par Peuch; Anlutung zar Mikroskopischen und Chemischen diagnostik der Kraukheiteis der Hausthiere von Dr. O. Siedamgrotzky und Dr. V. Holmeister; Praies Verbal de lo Société Veterinaire d'Alsace-Lorraine; Srijks Veeartsenijschool te Utrecht.

COMMUNICATIONS.—J. D. Hopkins, R. S. Huidekoper, F. Ryder, W. Gribble, H. W. Hoskins, C. B. Michener, J. F. Winchester, W. Wilson, Secretary, W. Pendry, W. R. Howe, F. H. Parsons, D. Dixon, J. Myers, Sr.

Works by Prof. A. Liautard, M.D., V.S., H.F.R.C.V.S.,

Professor of Anatomy and Operative Surgery to the American Veterinary College.

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AMERICAN VETERINARY REVIEW,

JANUARY, 1885.

ORIGINAL ARTICLES.

A FEW GENERAL REMARKS ON EQUINE ENZOOTIC PLEURO-PNEUMONIA,

BY J. C. MEYER, SR., V.S.

(Paper presented at the United States Veterinary Medical
Association—Cincinnati Meeting.)

The familiarity of practitioners with lung diseases in particular permits me to treat my subject in a general manner, as it does not deviate materially from sporadic cases.

The frequent appearance of this pulmonary complaint however, characterized by a uniform course, and undoubtedly instigated by the same agencies, induces me to draw the attention of my colleagues to this form of enzootic, which is enrolled by the majority of contributors to veterinary literature in the category of influenza, "erroneously so called," Prof. Williams asserts, and Prof. Vogel coincides with him. My reason for considering it of an enzootic nature, is the incompatibility of the two diseases; for instance: when the epizootics of 1872 and 1881 (the genuine influenza) set in, the enzootic pulmonary complaint in question disappeared, and not another case turned up for half a year or more. Now, if they were of the same pathological nature, both might exist simultaneously.

Spring, autumn and winter are the most favored seasons in

which this disease generally manifests itself as a unilateral pneumonia and pleuro-pneumonia. Fortunately the bilateral cases were in the minority. As long as the morbidity was confined to one lobe, and even when two-thirds or more became indurated, recovery could be confidently relied upon, but the bilateral cases generally declined into hydrothorax.

Age, sex, breed, locality and nutriment had but little influence upon susceptibility.

Symptoms.—The chills usually heralding the sporadic lung fever were scarcely ever observed. Anorexia and want of spirit were the chief symptoms for two or three days, while the respiration and circulation remained almost tranquil; at this stage, however, the thermometer invariably indicated the disturbance going on in the system with $103^{\circ}-4^{\circ}$ and sometimes rising to $105^{\circ}-7^{\circ}$ in twenty-four to forty-eight hours, though only when the disease reached its highest pyretic point. The short dry, sometimes soft cough which was heard in the beginning, soon grew less, or changed into a mere attempt until crisis set in. The schneiderian membrane presented a hyperæmic aspect. A thin, yellowish, or rust-colored discharge emanated from the nose, very often of a flocculated character; this discharge was generally visible between the third and seventh day, and then only periodically; occasionally it was expectorated. Already at the outset auscultation and percussion furnished reliable evidence as to which lobe, and to what extent it was affected. But if the attack was located in the central portion of the lungs, as some authors explain it, or that the exudation had not yet taken place, (which theory is just as plausible) the uncertainty continued one or two days longer, and in rare exceptions four or five days, when the vesicular murmurs in the afflicted portion either diminished or ceased entirely, or were succeeded by a brushing noise “fremitus” corresponding in time with the movements of either the lungs or heart. In the adjacent parts the respiration was indistinct at one time, tubular at another, and in the portions which were still intact it was supplementary. The complication with pleuritis pericarditis and the various changes and conditions of the parenchimatose infiltrations causes, as is known, characteristic acoustic sounds, of which

it is unnecessary to give a special description, since they do not vary from sporadic cases. The result of the percussion is omitted for the same reason.

The number of respirations varied from 24 to 60. The predominating tension gave way to a relaxity as soon as exudation took place, indicated by increased action of ribs and flanks. If hydrothorax was developing this phenomenon was very obvious from the seventh to the tenth day. The breathing then became emphysematous. The thoracic organs were intercepted in their functions by serous fibrinous exudation, manifested by the funnel-shaped expansion of nostrils, œdematous tumefaction of limbs, sternum, abdomen and extremities, and the shapeless alimentary evacuations, which in the beginning were usually dry, tough, glossy and sometimes coated.

On examining the heart's action, its beats were found rather feeble, and in the stage of convalescence often intermittent. The pulse also lacked energy and was most frequent from the second to the seventh day, generally recording 56 to 80. Those with 90 and over had scarcely any chance of recovery. Concomitant symptoms, current in one or the other, were a paresis-like incapacity of controlling locomotion, unusual stupidity, dullness, polydipsia, profuse diuresis, enteralgia and frequent lying down, though apparently resting comfortably. Notwithstanding the unfavorable aspect some of these patients presented, all of them made a good recovery.

Post Mortem Examination.—Time would not permit of holding a post mortem examination on them all, but those that were examined revealed in general a combination of parenchimatous pneumonia and pleurisy, partial hepatisation, suppuration, anæmia, and profuse effusion of serum and plastic exudation, completely covering viscera and other surfaces, etc..

Of forty-six recorded bilateral cases, eighteen died with hydrothorax. Twenty-four were operated upon, six of which recovered.

I am unable to point out any specific causes; those already known were only now and then suitable to the case. The much abused *cold* could not be held accountable in hardly any of these instances, for frequently horses were found sick after several

days or weeks rest, not having been exposed to the weather, or any other causes sufficient to produce such a morbid condition.

The sneaking entry and uniform course of this disorder, its appearance in localities where no infection or contagion by others could be traced, warrants me in believing that it must have its origin in the same source as diseases for which miasmatic agents are conceded as being the instigators.

A very plausible view pertaining to the genesis of lung fever is offered by an eminent medical pathologist, who claims that inflammation of the lungs is a general blood poisoning disease, and that the deposit of the morbid agents into the lungs is to be regarded merely as secondary and not as a primary process, etc. He furnishes exemplary evidence to substantiate these and other convincing assertions.

That there is an incongruity of the elementary constituents of the blood present when the attack sets in, leaves no doubt in my mind. But how this condition is brought about, whether by microscopic organisms, or imperfect functions of one or more of the cardinal organs, is not quite clear to me.

As long as the affection was limited to one lobe prognosis was favorable, but when the inflammation extended to the other, which usually took place from the second to the fifth day, it was regarded as a grave omen owing to its hydropsical tendency. The gangrenous smell of the expirum in some cases required the greatest caution in the prognosis, as the alarming symptoms may sometimes subside and the case take an unexpected favorable turn.

Treatment.—Venesection was never resorted to, the character of the disease seeming to forbid such procedure, though I had occasion to see it carried out without changing the course very obviously. The internal remedies employed, more or less, were tinct. or fld. extr. verat-virid., 40 grs. to 3i per dose, given three to eight times in twenty-four hours, with spts. niter dule., 3vj, tinct. lobelia 3ij, and dilut. succi. liquirit 3ss, injected into the mouth by means of a half ounce syringe, and continued with the same treatment until a perceptible reduction of fever was noticed. In individual cases the fld. extr. verat-virid. caused retching, when the dose was reduced. In diarrhœa and diabetes, paresis, or gen-

eral apathy, tinct. opii., simple, tinct. cinchona, tinct. nux vomica, or whiskey. In total aversion to food and nourishing beverage, an enema of whiskey, eggs and milk was given. In exceptional cases purgatives were administered; one-half to two third doses of any of the usual laxatives were sufficient to restore the sluggish peristaltic in the alimentary tract. To facilitate expectoration ammon. muriat inwardly, and inhalation of water vapors were resorted to. Diuretics and diaphoretics were brought into action when pleuritic exudation was suspected, among which was fld. extr. jaborandi, ʒij per dose, with an infusion of juniper, administered for three days in succession, without producing any sweating; nor did pilocarpine $1\frac{1}{2}$ grs., given hypodermically to one patient, produce that effect, but caused profuse salivation, dyspnœ, coughing, frequent defecation, etc. The excitement was intense, but the pathological condition was unconquerable, as the obduction revealed a few days later. Pericardic complications, nearly always present, prevented me from experimenting with the pilocarpine any further. Ole. tercbinth never failed to stimulate the urinary organs.

Though this operation does not prove successful very often, I had recourse to thoracentesis as soon as I was convinced of the presence of hydrothorax, for at this stage I put but little faith in tonics and diuretics. To disregard this technical performance wholly is censurable, even if we knew in advance that the result would be but a palliative one. By all means operate before the hydrostatic pressure upon the lungs and heart inflicts irredeemable damage. It is not necessary to withdraw the whole contents, as most of our authors assert. Should any diagnostic uncertainty exist, the exploring trocar will clear up all doubts.

My *modus operandi* still consists in the old-fashioned one; a trocar with a caliber of three-sixteenths of an inch in circumference. After parting the skin with a bistourie, the trocar is carefully introduced into the chest two or three inches deep, whereupon the liquid will flow immediately after the withdrawing of the stilet. Should the flow cease instantly, as is sometimes the case, a flexible catheter is put through the canulæ, which will promote the flow again. For full and methodic description of the

operation refer to Prof. Williams' Principle and Practice of Veterinary Medicine, or Prof Hering's Operationslehre.

The more modern apparatus for evacuating the thoracic cavity is the aspirator, which has become indispensable in human practice, yet the opinions of some of the most eminent physicians differ in regard to its merits in extracting the serous exudation concealed in the cavum thoracis. Notwithstanding its commendable quality of preventing the penetration of atmosphere into the chest, different reports in medical literature show that the contents were found purulent in the second aspiration. But I have already met with the turbid quality and foetid smell at the first operation, while in other cases tapped three to four times, whereby the entering of air (more or less) by the old *modus operandi* cannot be prevented, the liberated liquid presented no other change than a sanguinolent color; consequently, the so much dreaded contact of the atmosphere with the incarcerated serum is not alone to be blamed for this change, and even if it should be found in a state of approaching purulency, the chances for recovery are not hopeless. As an example, I will cite the following case: I withdrew from a seven year old, tolerably well kept horse, about thirty-five pints slightly foetid smelling whitish serum; two days later a purulent foetid smelling discharge from the nose took place. Before hydrothorax set in, he received the buccal injection mentioned above, and now carbolic acid, 3 ij and infus. juniper twice per day. After the gangrene smell subsided milk and gin were given him twice per day, for a week or more, until his appetite returned. One month's pasturing was sufficient to restore him to health, which was the tenth week after the beginning of his illness.

The question, whether my operative procedure might not have been crowned with better success by using the aspirator invented principally for this purpose, I intend to solve in the future, animated greatly by two interesting and instructive clinical reports, one entitled "The value of thoracentese in saving life by removing pleuritic exudations" in the *Thierärztlichen Jahrbücher*, by the late Prof. Falke, third vol., 1880, and the other by Dr.

G. Fleming, entitled "Pleuritis Purulenta," in the *Veterinary Journal*, April, 1880.

N.B.—At present some changes in the nature of this disease have taken place. Although occurring less frequently than in former years, the bilateral cases are turning up in proportion to the unilateral ones, and to my great satisfaction the majority of cases terminate in recovery.

REPORT OF THE COMMITTEE ON INTELLIGENCE AND EDUCATION.

BY W. H. HOSKINS, D.V.S.

(Paper read before the United States Veterinary Medical Association.)

Mr. President and Gentlemen:—

The Committee on Intelligence and Education beg leave to offer you these remarks, as their report. Since our last meeting in Boston, they have been diligent in garnering information from many sources, and find the past six months fraught with changes of a good character in the forward movement of our profession. During the past year there have been 91 graduates from veterinary colleges of the United States and Canada, and over 400 students have attended these schools during the past year. Aside from these a large number of young men have attended the courses of veterinary instruction at Cornell, Lansing, and several other schools which have established veterinary chairs. The coming collegiate year promises a larger body of students than any year in the history of science on this side of the water. During the present year the American, the New York, the Montreal, the Toronto, the Harvard, the Northwestern, the Chicago, the University of Pennsylvania, as well as European schools, will be working zealously in our field for the sending forth of veterinary practitioners; and who can estimate the scope and extent of their work in our midst. While it is hardly possible that all of these schools can be a positive scientific success, it would seem to me that it should become our duty as a national association to watch carefully, zealously and earnestly their every movement, giving our

earnest support to their every advanced step toward an elevation of the standard of our profession: alike the laying firmly of our voice and hand of censure and just criticism, on any of their movements that may tend to degrade or dishonor our calling. The present collegiate year will witness the advent of the largest body of graduates into the ranks of workers in our calling, and it behooves us, fellow members, to look forward to a higher standard of admission to our Association. These schools, I am convinced, are not all the growth of necessity, but of a mushroom character, and of a desire on the part of many to gain national or state notoriety, from the position of a place and honor accorded members of the profession in their respective faculties. The failure of our national government to recognize any of the professions in a national way, or to adopt a national standard, makes it the work of this Association to establish a standard of excellence that shall impress upon our country a high regard for our labors, and make it an honor to be desired by every qualified practitioner to gain an entrance into its ranks. The scope of our country may in the future require a division of our Association, but this will not necessitate any difference in standard of excellence. We have lived already to see the misuse in several marked instances of powers conveyed to corporate bodies of fitting men for the profession; and noted with profound regret the long range of difference in the individual requirements of these institutions of learning. With some the only apparent requisite seemed a stated length of time within their walls, or a given amount of money; while the range of knowledge seemed a secondary consideration. Boasting of their large number of graduates, as well as students, has seemed the highest aim of some schools, and a low sum for tuition and other similar encouraging features has called into our profession many totally unfitted members. Infancy, my fellow members, is the season for bending and directing our efforts toward rectifying these grave evils, and in this regard I would suggest a convention of the faculties of all our veterinary colleges of the United States and Canada, that a mutual and single standard of excellence might be discussed and, I hope, adopted. I am not sure that the establishing of veterinary schools, with one or two chairs filled by veter-

inary practitioners and graduates, the remainder by graduates of human medicine, is all that is necessary for the fitting of students for practical work in our calling. The exacting demand of a growing nation like America seems hardly willing yet to find a place for veterinary theorists in the ranks, but demand positive results with a practical and definite face upon them, to win them as supporters. The branches of materia medica and therapeutics, surgery and obstetrics, anatomy, theory and practice for all the classes of animals, over which we exercise a rigid care, are not such as can be properly filled, save only by veterinary graduates and practitioners, and each of them is wide enough to demand the whole labors of individual members. If schools are merely for the purpose of sending forth men with a large range of storage knowledge, impractical and to a large degree useless, then strong becomes the reasoning of those who have secured their knowledge by hard knocks, with a foundation of good common sense judgment; potent becomes their power in many ways, for success is seldom questioned of its means, while their blunders are excused and mitigated because of the paucity of opportunities afforded them in their education; while on the other hand our failures bring us much severe criticism, and in a great measure justly too, for the power we claimed to have gained through the channels by which we secured our education, but when the latter are shallow and superficial, we are perplexed to find a fair avenue of escape from the cutting thrust of unlicensed criticism.

A wise and well timed suggestion was made some time ago by one of our esteemed and revered members, when he proposed a National Board of Examiners for the graduating classes of the various veterinary colleges and schools. I deem it worthy of our consideration here to-day, and would suggest the appointing of a committee to examine into the expediency of such a body, to report the feelings and opinions of the profession in general on this all-important subject at a future meeting.

Since our last meeting, the bill that rested before Congress for the suppression of contagious diseases has become a reality, and a large corps of efficient men are now laboring in affected localities for the rooting out of these threatened calamities. But

eleventh hour vigilance has resulted in the stamping upon our western herds a disease whose ravages are calamities and far reaching in every sense of the word. Had the warnings of this Association been accepted years ago, our veterinary sanitary police would have averted this danger, and made our western territory the greatest positive source of wealth of our nation, in maintaining a class of animals from whose limits the civilized world have looked for a partial sustenance. The narrow views of a large proportion of our national legislators, whose greatest ambition during their first term was to plan for a second one, by securing for the creeks and rivulets a share of the gigantic appropriations for river and harbor improvements, or by securing an appropriation for their town or borough to build a post-office, that had not a single shadow of excuse as a necessity, and their second term was for the purpose of lining their own pockets with the ill gotten spoils of the most profligate government in the world; while the grave questions that imperil our people as a nation of power, were flagrantly overlooked or turned aside. The influence and bearing the outbreak may have on our greatest and truest wealth cannot be estimated, but to-day clouds are gathering over the nations of Europe, that threaten to endanger this most prominent interest of the United States. While it is yet east of the Mississippi, I trust that efforts will be made and encouraged by this Association in making it a barrier for the great western reserve, for, should it ever reach there, America has not money or means large enough to eradicate it, and it must then become a national scourge.

Much has been said for and against the formation of State Veterinary Associations. Much has been done on the part of qualified members of the profession to belittle and discourage the efforts of those who sought to make them valuable and permanent institutions. Directly and indirectly have these influences found expression in dissuading members from joining them. Few have been the arguments advanced why such a position was assumed, and of these scarce one has failed but to fall powerless of its own weight. These associations are and should be the recognized authority on veterinary subjects in every State, and

being looked upon by the laity as the representative body of the profession will no doubt live for a long time in the States where they exist. While I do not uphold or commend much of the work brought out by these associations, nor do I approve of their aims and efforts in certain respects, still where they have faltered and gone astray, I charge the responsibility upon those to whom it belongs, and that is upon the regular members of our calling, and I am here to defend to-day the necessity, usefulness, powers and achievements of these associations. when kept within the proper bounds. Alike, I am here to condemn the one main argument offered by opponents of these associations; that they are not strong enough in numbers in individual States to form such organizations. It is estimated that there are over 3,000 practitioners in the United States; over 1,000 qualified members, being an average of 25 to each State. I care not if your number is less than 30; I care not if your number is less than 20, or even 10; the labors of ten zealous and earnest men closely banded together are capable of accomplishing much, and I venture to say that less than this number compose the active workers of almost every veterinary association in this country. When you realize and think of the importance given to these associations by the press of the various States, you will alike realize why, fellow members, you should identify yourselves with them. You should be a component part of these bodies to first control and guide them, and I claim that it was possible for a few resolute men to have gone into these bodies and directed them, but by your indifference and denied support you keep out so long that some of them have gotten beyond your control now. Your first efforts should have been to have elected the prominent officers and in your battle you would have found this a fair test of your strength. Failing in this you could have waged your battle on the Board of Censors, the real governing body; composed of five members, you certainly could have secured a ruling or at least a working majority; from here you could have marked out your field of labor, not by accepting a cut and dried set of rules, but by distinctly stating who and how members should be admitted. In my own State, that of Pennsylvania, we admit

graduates of recognized colleges only without examination, they presenting their diplomas or being duly qualified for by another member. All others are only permitted to come before the Board of Censors, often having been in practice for ten consecutive years; where a liberal examination is given, and it has been my experience as Chairman that the most exacting members of the Board are the minority, or self-made men. After a year's labor you may find some objectionable members, and these may be removed from your association in one of many ways; either by expulsion, a petition for resignation, or the discussion and adoption of a code of ethics, and it will go to show the earnestness of self-made men, when I note here that at our last meeting the resignation of one of our members was received as a result of a petition sent him, but when brought before the meeting, one of our self-made men moved to lay the same on the table and to my surprise, only two members stood up with me to receive his resignation. Following this a motion emanating from the same source moved to expel the member, and a vote being called for, every member in the meeting rose.

The work of these associations is a vast one. The first is to complete your organization all over your State, following this by cultivating a better fraternal feeling, and remember, fellow members, what I have to say, that you will find among your self-made members many very able practitioners, men who are honored and respected in their homes and fields of labor; men who by years of hard knocks, associated with good careful judgment, or who absorbed the best opportunities then offered, when they entered practice, are more successful practitioners than college bred laborers. Among them you will find men whose whole lives have been spent by the fireside or bedside of their patients in earnest thought and study over their labors. These men are an honor and a credit to the profession, and deserve much commendation, for the methods of empiricism so popular they have utterly scorned, without the safeguards and support as well as guidance of an association. And as practical results are what are exacted from us as practitioners, in this line you will find many of these superior to us, who have garnered our education from veterinary schools and colleges.

The securing of State laws to govern the practice of veterinary surgery is an early movement to be encouraged, and I can assure you that without the aid and interest as well as zealous efforts of these men, your attempt to secure the same will be ineffectual. You can formulate a bill that will bring two-thirds of these men to your support, and such a one as will be acceptable and gladly welcomed by every qualified practitioner. You will find among your most regular attendants these men who are anxious to learn and who act as watch-dogs in every movement in their locality of a professional character; thus you are able to secure a definite knowledge of all matters in your State pertaining to your calling. The value of this cannot be estimated. Popular fallacies, ignorant and crude ideas, are what to-day degrade our profession more than anything else, and have led to many futile attempts to secure laws of a proper character, for the intelligent management of our contagious diseases, etc. By bringing these men together and discussing these popular points, and dealing less in the abstract theories of physiological research, etc., etc., you will convince these men of their errors, and wipe out many popular fallacies, as well as silencing those or making them more guarded in their expression, all of which will redound to a higher and more exalted standard of your profession.

The moulding of popular opinion finds a 'useful place here, and careful and wise efforts of the qualified members will find a hundred channels to penetrate and impress, which without your association would long be localized in their force and value. To this association there should be delegates regularly sent, to make grander and more powerful, as well as widen the scope of usefulness we should represent. But it will be unnecessary for me to further enumerate the useful labors for such associations, as time will not permit, and I hope I may be able to answer in argument any questions, etc., that may arise as a result of this report. Only one more point will I revert to in this direction, and that is to say that calumny, cutting thrusts of criticism and the belittling of humble but honest efforts will never elevate or place your profession on the high plane we all hope it may eventually occupy, but will belittle and degrade your own position in the

opinion of your own constituents, as well as in the eyes of the people at large.

Since our last meeting the New Jersey State Veterinary Association has been organized and is equipping itself for much useful work in the future. The association formed in Massachusetts is destined to become a powerful one in that State and will no doubt, in the high rank of education she claims in all her professions and occupations, soon show forth on her statutes a good law governing the practice of the profession there. She has able workers in her ranks and I trust they will individually feel the responsibility resting on them, toward the profession at large. An association has been found in Missouri, but is yet in a state of uncertainty, that I am unable to speak intelligently of its scope of work and promised usefulness.

As a result of this lack of support and mark of disapprobation placed on these associations by qualified practitioners, we are confronted to-day with two associations claiming a national character, and what may be the ultimate result of this can be hardly foreseen. Expressing my own personal opinion, I am willing to believe that the one recently formed may be dissolved, by a liberal and earnest movement on the part of this Association. I am ready to-day, if given the required power, I think, to bring to this association the support of our organization in Pennsylvania, and wisely directed efforts I think will be able to win the others; by accomplishing this you will withdraw the base upon which the second Association rests, and collapse must be the inevitable result of its career. In this respect, I suggest, fellow members, the appointing of a committee to confer with these Associations or the representative members of the same, toward a consolidation by representatives with this Association.

During the past year or more, many State Agricultural Societies and Granges have been securing veterinary practitioners to deliver plain talks and lectures on emergencies and slight cases, that the surgeon may be assisted and saved many useless points in slightly indisposed cases. This form of work is to be encouraged, for it will bring a greater amount of work to the surgeon, as well as stimulate dormant interests among those who

most need real scientific aid, and no doubt will bring many new and efficient workers into the profession. This also will tend to exterminate many ignorant beliefs, such as "hollow horn," "wolf in the tail," and other and greater absurdities. In this connection I also note that the lectures on veterinary science at agricultural colleges are becoming a compulsory course and where it is still an elective study, is being chosen by a large majority of the classes.

The recent investigations into the nature of that most horrible form of disease, hydrophobia, by that wonderful investigator Prof. Pasteur, whose labors in the lines of original research have astounded the world, and won for him the most sacred homage of any living being, are such that merit our profoundest gratitude, and it would seem fitting for us here to place his name at the top of the honorable of our association, that another link, the highest we possess, may be added to the chain of glory now encircling his powers, from every nation of the earth. In his successful separation of the active agent producing this much dreaded affliction, and the cultivation and final determination of the same to a point where it by inoculation so stamps the tissues of those animals, with a freedom from contracting the same, is a step that makes us feel like bowing our heads in profound respect and admiration to the wisdom and powers of intellect of this wonderful man. It makes it possible that in future years we may be made free from the possibility almost of many of these calamitous and awful afflictions.

The proven identity of the bacilli of human and animal tuberculosis, and the positive method now of diagnosing the same, is a remarkable revelation, and wins for those deep searchers in these heretofore mysteries our profound thanks. One by one these ravaging scourges are being well delineated, in their nature, form and power, and the already written volumes on the same warrant a belief in an early solution of the means of handling and lessening their former fatality and direful results. And what with these astounding results, and the rapid advances in every other line of reasoning intelligence, the present generation of scientists are destined to heights of power and lucid reasoning that cast in shadow the philosophers and scientists of the dead worlds.

In conclusion, fellow members, I would refer to the labors of one of our fellow members, who within the past year has separated, cultivated and made many valuable discoveries, associated with the contagious principle of pleuro-pneumonia. I had hoped to have seen him present here, that his pathological researches might have been shown us.

And now, hoping that our labors in the future shall be worthy of the interests and nation we represent, and that every individual member of this Association will feel the weight of responsibility resting upon him, and be up and doing, I submit these remarks to your will and pleasure.

CINCINNATI, Sept., 16, 1884.

EPIDEMIC CATARRHAL FEVER,

A DISEASE AFFECTING THE RESPIRATORY ORGANS OF HORSES.

BY JAMES ALBRIGHT, V.S.

General History of the Disease.—This species of disease is usually more prevalent in the spring of the year following a wet and cold heavy damp air, one day cold, next day hot. By some it is thought to be contagious; I do not think it is contagious, or is produced by a parasite, but is simply caused by too sudden changes of the atmosphere. In the spring of the year the animal is changing his winter coat of hair for his summer coat. While the animal is undergoing this change the pores are more open, and the system is therefore more subject to disease. The animal has not done much through the winter months. Taking these several causes, no wonder that they take bad colds. Sometimes, a great many times, if a little care were taken, the animal would not get affected very badly with the disease; but the animal takes a trifling cold, and the owner thinks it will not amount to much, so he does not render any medical aid, and the disease is aggravated by hard work and exposure; getting wet, worked until warm, left standing in rain and cold winds to suddenly check the perspiration. The result of this kind of usage we will have in this kind of disease in its worst form and very difficult to treat.

The animal generally dies of high inflammation of the respiratory organs. A great many times, if not killed in the commencement of the inflammation, they will linger a long while, and dropsy of the chest will put an end to the animal.

The cause of death in these cases is most generally laid to the medical attendant's medicine, or he did not understand the case. They do not think how the animal was exposed, or the disease was working on the system for some time before any medical aid was called in to see the patient.

I lost a horse this spring from this disease. When I was called by the owner to see the case he said, "I was working my horse some days before in the three horse plow; a rain came up when I was plowing; I did not go to the barn right away with the horses; they were warm and got wet; next day he commenced to cough very bad. For two days before calling you, he coughed so I thought he would choke." On examination I found the top of the wind pipe very sore, and the lung and pleura very badly affected.

We often hear the remark made, "I have two or three horses or colts that are coughing very bad, and do not eat; if they do not soon get better I will call on you for medical treatment." If nature begins to rally the animals make a slight recovery; but the disease is stubborn; it does not entirely leave the system; it causes a thickening in the membranes of the respiratory organs, and the animal has asthma and chronic bronchitis; which is produced in thousands of horses in this country.

These cases could almost all have been cured in the commencement of the affection. Some cases that have been treated are left the same by being worked too soon, exposed again to the former influences before the system is prepared for the change, and they are left diseased through life.

The symptoms vary some in its attack upon the animal. The first usually noticed is a short dry cough; next the animal is off his feed, seems sore in turning around, slight watery discharge from the nostrils, mouth hot and feverish, breathing heavy, drawing up his flanks. The animal is debilitating rapidly; the parotid and sub-maxillary glands somewhat tumefied; the head of the

animal pointing as in poll evil; does not like to have his throat handled; gulps his water; does not in the commencement drink very much; some days, in drinking, the water runs out of the nostrils; the ears and legs do not get so cold as in inflammation of the lungs; in bad cases the pulse increases in beat; from the start the animal does not hang his head, keeps it well up; does not look at his sides. In some cases, in the last few days of the disease, all the organs in the body seem affected; the brain, bronchial tubes, lungs and kidneys; in fact, no part seems to escape the inflammation.

I treat the case the way the animal seems affected; external if the brain seems affected. I use cold water over that organ; if the lungs and pleura seem affected, I counter-irritate the side of that organ; if the throat is very sore, I counter-irritate there. For the internal treatment, I give tr. aconite root and fld. ext. belladonna combined in medical doses every four hours; also give tartar emetic with minute doses of aloes, every four hours, given alternately with the aconite and belladonna. When the animal has made a decided improvement and begins to lie down, I use the tartar emetic and aloes alone, given only three times a day. When the case seems out of danger and eats well, give tonics and stimulants in his food. If the disease was not produced by too bad exposure, they generally make a good recovery.

EDITORIAL.

VETERINARY FRAUDS.

We reprint from one of our exchanges an article with the above title, which deserves the attention of both the public and the members of the veterinary profession.

After referring to the necessity which is making itself manifest, for the cultivation of veterinary medicine, because of the important part it is called to play in the interest of our domestic animals, the writer brings forward the subject of the organization of private veterinary schools and their necessary consequences, viz.: the letting loose upon the country of a cloud of veterinary graduates, with the influence that this may exert because of the

issue of official reports signed by "V.S.," "D.V.M.,"—or, perhaps half the balance of the alphabet—and urging the paramount importance of the owner of such a title being worthy of the right to use it, together with the danger that threatens the public if the education given at such private schools is imperfect.

Especial emphasis is laid upon these points because of the fact that the writer had before him the catalogue of an institution which offers to graduate after one course of lectures! "Heaven," says he, "save the country from the infliction of such veterinarians!" We will add, "God save us from such representatives of our profession."

Thanks are due to Mr. G. W. Rust for his forcible and timely article and for the thorough manner in which he lays the evil before the agriculturists of the United States. We can only regret that a feeling of excessive delicacy has not allowed him to name the school (!) to which he refers, as we believe that places of such a character ought to be publicly known.

There are organizations in some of our States that are known to deliver certificates of membership to men who are often unworthy of it. Such certificates are exhibited to the unsuspecting public as evidence of a graduation, and they are often granted to parties who have never been inside of a veterinary or medical school. These are bad and worthless, and the people at large ought to be cautious in accepting them as an evidence of knowledge. But they are not worse than those engraved diplomas of an institution which offers to give, after one course of lectures, the certified acknowledgment—by a number of so-called professors—of an education which we all know requires years of hard study to obtain.

The public exposure of such so-called *colleges* and similar organizations is due to the veterinary profession, to those who intend to enter its ranks, and to the community at large.

SANITARY VETERINARY STATEMENTS.

1884 has passed by, and we can now, for the first time in the history of American veterinary medicine, compile yearly statistics of contagious diseases as correct and truthful as can be expected,

when the material to be gathered depends upon private reports and collections of facts, and the willingness to make them public without being in any manner constrained by higher authority. Our readers have not forgotten the calls we made upon them some time ago, and they have seen how we submitted to the profession at large the statements we had secured; but these were only for the first six months of the year. The last semester remains to be heard from, and we hope that every member of the profession—readers of our paper or not—will feel it his duty to send us the necessary information to complete our reports. A glance at the September number of the REVIEW, page 279, will show the diseases upon which we desire information.

ADDITION TO OUR REGISTER OF REGULAR GRADUATES.

Through the kindness of Dr. W. Howe, of Dayton, Ohio, we are able to record the name of John Crotty as an alumnus of the London School. The example of Dr. Howe ought to be followed by those of our readers who may have observed similar omissions in our preceding pages.

REPORTS OF CASES.

LUXATION OF THE PATELLA OF SEVERAL MONTHS' STANDING— DIVISION OF THE LONG VASTUS MUSCLE—RECOVERY.

BY DR. J. RYDER, D.V.S., House Surgeon American Veterinary
College Hospital.

Description and History.—A brown stallion, three years old, had been in training at the Long Branch race ground, when about the middle of May he was found in his stall with his off hind leg extended backwards, unable to carry it forward, moving with great difficulty. When the door of his stall was open, he fell down and it was with great difficulty that he regained his feet. A veterinarian was called, who made the diagnosis of sprain of the anterior tibial muscles, and treated him as such until the

end of July, when the owner had him brought to the hospital in an ambulance.

Condition at Admission.—The animal being unable to back from the conveyance in which he was moved, was turned and led out. He was a fine looking colt, and in good condition. In walking, he carried his off hind leg in excessive extension, backwards first, then by a sudden movement in abduction, bringing it forward without any flexion of the leg below the coxo-femoral articulation. The muscles of the anterior crural region, and especially the fascia lata, seemed atrophied. Those of the gluteal were much smaller on that side. As the animal arrived late in the evening, he was placed in a stall and left until the next morning for more careful examination.

On the 29th, he was with difficulty backed, or rather pushed back from his stall. He was in the same condition, had not laid down during the night. The off leg was then seized by an assistant, brought well forward, and held in that position while by manipulations and pressure upon the external face of the patella from behind forwards, the bone was felt slipping from under the hand, and with a sharp cracking sound returned to its place. The leg flexed suddenly, and the animal led forward moved freely with perfect flexion of the stifle joint: but as soon as the pressure of the hand ceased, and the animal had made but two or three steps, the same condition returned, of extension and of inability to walk. This was repeated several times with like results.

The ordinary simple treatment of hot fomentations being considered of little advantage in a case of such standing, a severe blister was applied all over the joint, extending a good distance all around. The effects of the application seemed to be at first satisfactory. An enormous swelling took place; the scabs of the blister formed a firm bandage, but the result was nevertheless negative. No improvement was obtained; the leg remained in the same condition, perhaps a little worse, as it then became very difficult to obtain a temporary reduction of the dislocation, as had been done at first. Having been allowed to walk loose in a large box stall to wait the removal of the scabs of the blister, he was on the 15th of August returned to a single stall, and hobbles

were placed upon the legs of the lateral biped; the dislocation was reduced, and though he was kept in that uncomfortable position for three days, no satisfactory result was obtained.

The case then assumed a very unfavorable aspect. The leg was becoming excessively atrophied, the animal began to lose flesh, his appetite became poor, and everything seemed to indicate a failure to relieve him.

It was then that the propriety of subcutaneous myotomy presented itself. The operation carefully thought of and spoken of to the owner, was at last decided upon and performed by Dr. Liautard on the 9th of September. Having been given a dose of chloral and being kept under restraint with a twitch, a small incision was made at the lower border of the anterior part of the biceps femoris, and a curved blunt bistoury about three inches long introduced under the skin; when its sharp edge was turned on the muscle the division of the fibres was plainly heard, and when the muscle was thought to be entirely divided, the animal allowed to go, the patella having returned at once to its position, to be followed by an immediate displacement. After waiting a few days to have the parts healed, which they did with little suppuration, the owner was notified of the failure of the operation, when, being undecided as to what course to pursue, he was kept at the hospital.

On the morning of September 27th, when the groom was entering his stall to feed, the horse made a sudden turn, slipped and fell down; he rapidly regained his feet, was up in a moment, and when called upon to move was found moving the leg with perfect action, walking with a firm, steady step, although occasionally showing a slight lancinating pain in the limb, which disappeared in a few days. He was exercised every day, improving rapidly in form as well as in action until the 14th of October, when he was discharged in his normal condition.

Remarks.—Is it an error, when considering the rapid and unexpected recovery, to suppose that the division of the muscle at the time of the operation was imperfect, but was completed when the animal fell, and thus confirming the propriety of the operation in cases of such long standing?

FOREIGN BODY IN NASAL FOSSA.

BY FRANK H. PARSONS, D.V.S.

On the 20th ult. I was called upon to go to Livonia Station, about forty miles south of Rochester, to examine a horse belonging to Mr. T. E. Annis, of that place.

I found a large ten-year-old gelding which the owner told me had been discharging large quantities of a very foetid matter from the right nostril, and breathing very noisily, in fact roaring whenever moved off a walk, during all the time he had owned him, some four or five months, and that he was in the same condition when he came into his possession.

On the right side of the face but close to the median line, and about one-third the distance from wing of nostril to eye, was a low flat tumor, rather irregular in outline, about two to three inches in diameter, and standing out from the normal line of the face from one-half to three-quarters of an inch; hard and bony to the touch.

By examination per nostril I found that the fossa was almost completely occluded, I being able to find only one small passage, barely large enough to admit my finger, leading from below to above the tumor; here also the tumor, though covered by the mucous membrane, was mostly hard and bony.

I was at a loss for a correct diagnosis, but knew that there was something there that must come out, so I decided to trephine through the tumor from without. This I did with much difficulty, owing to the surprising hardness and great thickness of the bone, just one inch.

Within was first a quantity of thick cheesy fetid pus, then a peculiar feeling substance which proved to be coarse sponge; by the aid of dressing forceps I removed enough pieces to have made a sponge as large as a man's fist.

After thoroughly cleansing the cavity I ordered simple antiseptic injections twice a day.

Have since learned that although still discharging the pus is no longer foetid but of a laudible character, and is daily lessening in quantity. Breathing also much improved.

I send this as I think such a case apt to occur anywhere as long as "smart" horse dealers "sponge" animals with any discharge from the nostrils, for the sake of palming them off on the unsuspecting; and with the hope that it may help some one else to make a correct diagnosis.

RECTO-VAGINAL RUPTURE.

BY ROBERT YOUNG, (Bowmanville, Can.)

I send you reports of two cases met with in my practice;

On the morning of the 13th June, I was called to see a mare, the property of Mr. Wm. Stevens of this town, the messenger stating that she could not foal. On arriving at his place I found a four year old mare, (primipara) with the four limbs and head of foetus protruding from the anus. She had evidently been in labor the greater part of the night. I had her raised to her feet, led to the edge of a hill, facing her down hill with one hand in vaginal, the other pressing against the foetus; during intervals between labor pains I succeeded in bringing it into the natural passage, after which I had little difficulty in extracting the foal. After removing the foetal membranes, which was difficult as they were firmly adherant to the walls of the uterus, I proceeded to ascertain the extent of the rupture. On examination per rectum I found about five inches from the anus a large rupture, the walls of which from their previous distention were loose and flaccid. I decided to suture the rupture. With a needle armed with a strong waxed cord, I brought the edges together with four sutures which was easily accomplished per rectum owing to the sphincter being very much relaxed. I next administered a strong opiate to relieve pain and straining, which had the desired effect. She was now placed in a roomy, loose box, ordered nothing to eat but small quantities of grass and bran mash. Pulse about 60 per minute.

June 14—Mare quite lively, passed small quantities of fœces per anus.

June 17—Doing well, pulse natural, slight discharge of healthy pus from vagina. Did not see her again for ten days—

found her in the pasture field. Owner stated that she passed feces naturally and to all appearances was as well as ever, but on being made to trot there was an unnatural noise as of air being aspirated through the rupture. Saw her about a month after; the unnatural noise had ceased altogether. She made a complete recovery and has trotted several races last winter.

LITHOTOMY.

BY THE SAME.

Early on the morning of the 15th September, 1883, I was called to see a gelding, the property of Mr. J. England, baker of this town. The following history of the case I obtained from the owner: To use his own words, he has been bad in his water for a long time; the day previous while out driving, he would suddenly stop and stretch as if about to stool, pass a small quantity, continued dribbling of urine from the penis. When put in the stable at night he seemed uneasy, but he (the owner,) thought he would be all right in the morning. The following morning I was called and found the animal very uneasy, moving backward and forward in his stall, stretching as if about to stool, pass small quantities with violent straining. I at once suspected some obstruction in the bladder, and on examination per rectum, had no difficulty in detecting the obstruction to be a large calculus in the bladder. I at once passed the catheter and relieved the animal. I now informed the owner that its removal could only be accomplished by an operation, which would necessarily entail a certain amount of risk. He at once consented to the operation and wished it performed at once. Having made necessary preparations, I decided if possible, to operate without casting the animal. I had the horse led outside of the stable door, the ground being about eighteen inches lower than the stable floor, placing a plank on each side of the door, parallel with the horse, to keep him from moving sideways. I had a twitch put on his upper lip, held by an assistant, strapped up his fore-foot, and with a long rope from the halter tied back to a post to keep him from going forward, I then passed the

curved grooved sound up the urethra until it could be felt in the perineum. Held by an assistant, I then made an incision into the canal, cutting a little from the right side. The sound was then withdrawn, and a straight grooved director passed into the bladder from the incision. With the probe-pointed bistoury the incision was enlarged to freely admit the forceps which I introduced, held by the left hand, with the right in the rectum. I had little difficulty in guiding the stone into the blades of the forceps, and having satisfied myself that they contained nothing but the stone, I gradually withdrew them holding a large calculi weighing five and one-eighth ounces. Having ascertained that nothing more remained to be removed, the wound was closed with three sutures, the animal released and led into his stall. He frequently passed small quantities of blood, which in all would not be more than a pint. About four hours afterwards I called to see the animal and found the wound rapidly swelling, which I arrested by the application of iced water continuously for two days and a night.

Sept. 16th—Swelling gradually subsiding; appetite good; pulse 70 per minute.

Sept. 18th—Doing well; pulse 50; healthy discharge from the wound.

Sept. 27th—The urine has ceased to flow from the wound.

Oct. 10th—The horse has made a complete recovery; sutures are removed and the horse is put to work and is now working as well as ever.

In conclusion, perhaps, some of your readers may think that in performing the operation without first casting the animal was going beyond discretion. To them I would say I have seen the operation performed under the influence of chloroform and I consider that the violent exertion and excitement necessary in securing the animal and administering anæsthetics prejudicial to the success and future termination of the operation.

SEVERE CASE OF HICCOUGH.

By W. K. LEWIS, V.S.

A very rare case of hiccough in the horse occurred yesterday, the subject being a horse convalescent of pharyngitis. After

drinking copiously of cold water was taken with shivering, followed by hiccough, the attack being so severe as to lift the hind quarters clear off the floor at every spasmodic attack, which occurred every three seconds. Administered anti-spasmodics, such as nitrous ether and tinc. opii. in full doses, repeating in two hours without any apparent result. Three hours from the commencement of the attack administered a subcutaneous injection of morphine. Ten minutes later hiccough ceased leaving no abnormal symptom, save slight shivering only to be felt.

If you consider the case of sufficient interest to warrant publication in the REVIEW, so that some brother professional of more experience in such case than myself, can broache some good idea on the subject, shall be delighted to read it.

A CASE OF FRACTURE OF THE SESAMOID BONES.

BY ALFRED H. POPE, (Student A. V. C.)

A grey horse belonging to a large and well known firm of livery stable keepers in this city, was on Friday, Nov. 28th, being driven in a pair horse coupe, when it slipped on the near fore-leg and on taking the next step with that leg, the pastern and hoof on reaching the ground slid helplessly in front, the whole weight consequently coming on the sesamoid bones and inferior extremity of the principal metacarpel bone, the animal then falling down. Being unable to rise and in great pain, it was removed in an ambulance to the stables, where it was ultimately destroyed. Post-mortem examination showed rupture of the bifurcated branches of the suspensory ligament of the fetlock, directly below their fixture into the summit of the sesamoid bones. Also rupture of the internal collateral vein of the cannon, resulting in excessive internal hæmorrhage. But the most remarkable feature in the case was complete fracture of both sesamoid bones, resulting from the severe and sudden concussion on the hard road.

HOG CHOLERA.—This disease is prevailing to a large extent, both east and west.

EXTRACTS.

VETERINARY FRAUDS.

BY GEORGE W. RUST.

Heretofore very little attention has been given in this country to the subject of veterinary science. Our live stock, or a very large proportion of it, was maintained in a condition very nearly approaching a state of nature, and there was as little risk of disease as could be imagined. It cost little to produce or raise stock, and the loss of an animal now and then seemed a small matter. There was plenty of room; not many animals were kept on a limited area or in same enclosures, and there was small chance for disease spreading from one to another. It was only in exceptional cases that there were animals of exceptional value, for the protection of which special solicitude was felt; and so, nature was generally relied upon in all cases of animal ailment, and very little encouragement existed for any one to make a careful and scientific study of animal diseases. But of late years these conditions are undergoing some change. The conditions under which animals are maintained are becoming year by year more artificial; their production is recognized as a clear matter of expense, and their maintenance a positive source of profit, and the control and treatment of disease is recognized on all sides as a matter of decided importance. There is never a demand but what there is soon something with which to supply it; and the demand for professional treatment of live stock will undoubtedly very soon produce a supply of veterinary practitioners in numbers at least fully up to the requirements. Quite a number of the agricultural colleges are giving attention to the subject, maintain professors of veterinary science, and give a full course of instruction in this important department. But the field, it seems, is not to be entirely left to these public institutions, but private veterinary colleges are springing up in the large cities also, from whose precincts the country will soon be favored with a cloud of veterinary graduates.

These men are to go out and take people's money and to give

them counsel and advice upon matters of the highest importance to them as individuals, and in many respects affecting material public interests. From their proper or improper diagnosis of disease, its presence is to be detected in time for its suppression, or communities lulled into a sense of false security until it well-nigh escapes control and involves thousands of dollars in money. These men are to say disease exists when it does not exist, and keep the country convulsed with alarm, or they are to deny its existence until it is spread far and wide. It seems to me the attainments of these men and their qualifications to practice this high profession involve questions and consequences of such importance that the public authorities should exercise some supervision over them. The "hoss doctors" at the country cross-roads, whom everybody knew to have no professional training, and who made no pretense of being graduates of any school higher than a blacksmith shop or a livery stable, were bad enough, but a horde of quacks, having no more theoretical knowledge and a great deal less of the practical, backed up by college diplomas, would be a great deal worse; and it seems to me the authorities should protect the people from this form of quackery, and see that those who hold themselves out as veterinary surgeons are so in point of fact, and not merely by virtue of a piece of purchased paper. The country cares very little for the opinion signed by "John Jones, blacksmith," as to whether an ailing animal is suffering from the itch or pleuro-pneumonia, because it knows that under no circumstances can he with certainty distinguish the one from the other. But when the report goes abroad signed by "John Jones, V.S., D.V.M.," and perhaps half the balance of the alphabet, it may have a very serious and far different significance.

I write in this vein because I have every reason to believe that all the institutions which assume to graduate veterinarians are not equipped or intended to give the country *bona-fide* professional men competent to practice this profession. If I were a veterinarian myself, so that I could be exactly sure of my ground, I should feel like indulging in plainer talk about some of these institutions; but as I can only regard the question from the

standpoint of a common fellow "up a tree," I must necessarily confine myself to generalities. But I am convinced the matter needs looking after. It is too easy a matter for a few men of uncertain attainments in a big city to organize a college and divide among themselves the professorships, for the sake of the advertising and advantage they would secure in the line of local practice, and rope in students at good round fees, to whom they could impart little practical and correct information. It is an easy matter, I say, and should be made less easy. If there are students who honestly desire to qualify themselves in the profession they should be protected from the danger of wasting their time and money in such quarters as these. I have before me a catalogue of an institution which seems to me to read very strangely, in which it is offered to graduate country practitioners—the "hoss" and "cow" doctors of the cross-roads, the *erstwhile* blacksmiths and stable boys grown beyond their attainments—after attending one course of lectures! Heaven save the country from the infliction of such veterinarians! One course of lectures! As a rule it would take several courses to unlearn these men the vicious and barbarous things they think they know already and reduce their minds to that state of vacancy where they could receive correct impressions. They would have the real profession to acquire afterwards.

CONTAGIOUS PLEURO-PNEUMONIA AROUND NEW YORK CITY.

Hon. Geo. B. Loring, Commissioner of Agriculture, has sent us a copy of a very valuable report, made to the Department by his veterinary inspectors in and around New York City, Brooklyn and Jersey City. The report is dated New York, Nov. 19, and is as follows:

To Hon. Geo. B. Loring, U. S. Commissioner of Agriculture:

The undersigned veterinary inspectors under the United States Bureau of Animal Industry, appointed by you to investigate the condition of the cow stables of New York, Brooklyn and Jersey City, and the amount of contagious pleuro-pneumonia

found therein, have attended to the work assigned them, and deem it important to make a preliminary report of their proceedings and the result of their investigations for the benefit of this community, who are the consumers of the dairy products of this region, and for the information of those sections of the country in which the cattle industry is large and valuable. The co-operation of the municipal and health authorities of New York, Brooklyn and Jersey City, and of the managers of the stock yards, has been freely and generously given in the work, which includes the examination of all cattle in the stables and yards, and also the condition of the quarantine station at Garfield, N. J. In the investigations made the *utmost care* has been taken to examine all the conditions surrounding the animals—such as the location, cleanliness and ventilation of the stables, the amount of exposure to diseases, and, as far as possible, the history of the cases examined and the application of the best scientific knowledge to be obtained by us has been uniformly made.

The condition of the trade in cattle has been found to be generally good. The cattle brought from the west by rail have been in excellent order, and have sold well for the care, feeding and breeding of that section of the country from whence they came.

The quarantine station, under the charge of Dr. A. M. Farrington, has been well managed, and the importers of foreign cattle have cheerfully complied with all the requirements of the law.

The inspection of the cow stables has been carefully conducted, and has resulted as follows: In 756 stables in New York City, containing 3,318 cows, there were found twenty-six cows infected with pleuro-pneumonia. On Long Island, 1,413 stables have been inspected, and among the 10,072 cows confined in them, there were found 325 cases. In 555 stables on Staten Island, containing 3,857 cows, there were found twelve cases. In thirteen stables in New Jersey, containing 180 cows, there were found eight cases. In the Jersey City abattoir, thirty-nine visits discovered thirteen affected animals. In the New York offal dock, out of sixty-three *post-mortems*, twenty were found to

be cases of pleuro-pneumonia. In the slaughter-houses of New York and Brooklyn, seventy-six animals were examined and fourteen were cases of the disease. In many instances of reinspection it was found that the animals diseased on first inspection were dead, and the cases which presented themselves were new ones. The result of the investigation has been to give a definite idea of the extent of the disease, and to secure a great improvement in the condition of the stables in which the animals are confined. It is evident, moreover, that the owners of the cows are satisfied that the work of inspection is of great benefit to their business as milk-producers, and they have in many cases applied for the inspection where they suspected the disease might exist, and also to satisfy the Boards of Health that they have complied with the sanitary regulations.

The experiments relative to the contagiousness of pleuro-pneumonia as found in the stables inspected, which are conducted at the station on Barren Island, have developed many important facts; and in connection with similar work at the station in Washington have secured much valuable information which will be laid before the public in detail in the report of the chief of the bureau. The contagiousness of the disease found here has been proved beyond a question, and we are confident that further investigation in this direction will enable us to decide upon the virulence of the disease as found in America, the time of incubation here and the possibility of controlling it in those sections in which it may unexpectedly appear. The Brooklyn Board of Health, through the commissioner, Dr. J. H. Raymond, have expressed great satisfaction with the work going on at Barren Island station, as it enables them to decide as definitely as possible the precise nature of the disease, about which some doubt seems still to exist in the minds of many who are interested in the matter scientifically and economically. The board has been entirely disposed to consider our work as that of professional investigators, and not that of "non-professional" inquirers. We are happy to state that correspondence with the Department of Agriculture upon enlarging the sphere of these experiments, as bearing on the production of healthful milk, will be entered upon

by Dr. J. B. White, member of the New York Board of Health, and also by Dr. J. H. Raymond, of Brooklyn, who have witnessed our experiments with great interest and anticipate much benefit therefrom. We are entirely of opinion that all possibility of communicating the disease by decomposing and steamed animal matter at or near stations is not to be feared in any degree; and in this opinion Prof. C. F. Chandler has expressed to us his concurrence, at a deliberation in which he was kind enough to take part.

Signed by L. McLean, M.R.C.V.S.; Wm. B. E. Miller, D.V.S.; Ch. B. Michener, D.V.S.; Thomas J. Herr, M.D., D.V.S.; James W. Hawk, D.V.S., and T. C. Whitfield Rowland, D.V.S.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

The regular monthly meeting of the New York State Veterinary Society was held at the American Veterinary College, on Tuesday, Nov. 11th, at 8 P.M.; Dr. R. A. McLean, Vice-President, in the chair.

The following members were present: Drs. Kemp, Cattnach, Newman, Robertson, Burden, Both, Coates, R. McLean, Dixon, Pendry, Bretherton, Ryder, Charum, Allen and Foote.

Minutes of last meeting read and approved. Dr. Dixon read a paper on Equine Purgatives, in which he referred at considerable length to the different purgatives and laxatives that are used for the horse, giving their respective actions and general results. The paper was the means of drawing the whole of the members present into a very general and highly interesting discussion, during which Prof. Robertson spoke of the several new purgatives that were being brought into veterinary practice, stating that podophyllum had been used with bad results as a rule. The administration of mild laxatives in inflammatory trouble was held by many present to have had good results. As to the danger of repeating purgatives was shown by Dr. R. McLean, who reported that he had one case where purgation did not set in till after the sixth day; as did also Dr. Pendry, one where a very free purgation set in after seventy-six hours. The different doses, preparation before purging, when they should be given, and when not, were subjects widely and thoroughly entered into by the whole of the members present, closing by a vote of thanks to the essayist.

In executive session, the Board of Censors reported favorably on the application of Dr. W. G. Hollingsworth, which resulted in his election to membership. John H. Jacobus, V.S., and W. H. Jackson, D.V.S., both of New York City, were proposed as members, both propositions being referred to the Board of Censors.

The subject of legislative law was brought forward, when the chairman of the committee on the bill stated they wished to report progress. As special notices had been issued to the effect that the question would be discussed that evening, it was naturally expected that the meeting looked for something more than such a report, and the committee was so informed and reminded that there was no time to be lost, as other members of the profession, outside the members of the society, had to be consulted, it being the desire that a bill should be framed that would meet with the approval of the whole of the veterinary profession of the State. It was understood that the committee would be ready to report at the next meeting of the society, to be held on the second Tuesday in December.

The following meeting was held as above, at which were present: Drs. Robertson, Cattanaach, Coates, L. McLean, Dixon, Burgett, Johnson, Pendry, Allen, Cuff and Ryder; Vice-President Dr. Johnson occupying the chair.

After the minutes were read and adopted, Dr. Ryder read a paper on "Fractures, their diagnosis and indications for treatment," which was followed by a good general discussion, and a vote of thanks from those present.

The Board of Censors reported in favor of Dr. W. H. Jackson, and that John D. Jacobus, V.S., had not appeared before them as requested. The former was duly elected a member.

The committee on legislative law reported progress, and in reply to Dr. Cattanaach, as to what progress had been made, the chairman stated it was of a satisfactory nature; they fully expected that by the next meeting they would present a bill that would receive the favor of the whole of the veterinary profession.

On motion, the members were requested to report interesting cases that came under their notice, instead of reading a paper, Dr. Johnson promising to read a paper for the February meeting.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held at No. 1526 Race St., Philadelphia, Thursday evening, Dec. 4th. The president, Dr. Hoskins, called the meeting to order at 8:30 p.m. Members present, Drs. Rodgers, Zuill, Hoskins, Glass, Weber, Gaentner and Huidckoper.

The minutes of the previous meeting were read, and with slight corrections were approved.

The Committee on Place of Meeting, having completed their work, were discharged.

Dr. Hoskins spoke of a bill that had emanated from the Pennsylvania State Veterinary Association, that would be presented to the Legislature during the coming session, that would regulate the standard of veterinary practitioners. He recommended this Association to endorse it, as it was believed it would become a law, as no other bill had ever been presented with the support this one had. Dr. Glass read the clause in the bill which referred to the qualification necessary to register [as existing veterinarians. He alluded to men who did occasional jobs,

and thought it not fair to class them with men who had devoted ten years of continued practice. He thought it should be a requirement that the applicant should have spent ten years in uninterrupted practice, during which time veterinary practice should be his source of livelihood. Dr. Rodgers claimed the bill sufficient, and contended that its passage would not prevent men from registering who had engaged in practice during ten years preceding the act. A discussion followed, during which Dr. Zuill read a test case that had come under the act that regulates the practice of medicine. On motion by Dr. Rodgers the Association endorsed the bill.

Dr. Glass recommended that at each meeting the President appoint some member to report a case that occurred under his notice during the month, with remarks. On motion of Dr. Zuill, it was carried.

Dr. Rodgers extended an invitation upon the part of the New Jersey State Veterinary Medical Association, for the members of this Association to attend their quarterly meeting to be held at the American House, Trenton, on December 10th, at 3 P. M.

Dr. Rodgers read an able paper upon milk. The author showed that he had given his subject a great deal of study. He dwelt at length upon the chemical composition, the laws that regulated the sale of milk in New Jersey, etc.

A discussion followed that was both interesting and instructive. Dr. Huidekoper suggested that the paper read by Dr. Rodgers be published as a bulletin from this Association. On motion a committee was appointed to confer with Dr. Rodgers as to the publication of his paper as a bulletin of the Keystone Veterinary Medical Association.

Dr. Glass was appointed by the President to report a case at the next meeting. Adjourned, to meet the first Thursday evening in January.

The Keystone Veterinary Medical Association have made arrangements with Dr. Zuill to hold their meetings at his place, 1526 Race St., until further notice.

CHAS. T. GAENTNER, *Secretary*.

THE CONNECTICUT VETERINARY MEDICAL SOCIETY.

A regular meeting of the above Society was held in New Haven, on Tuesday December 2d, the President, Dr. W. J. Sullivan, in the chair; also present, Drs. W. K. Lewis, E. C. Ross, F. E. Rice, E. A. McLellan, A. D. Sturges, Nathan Tibbals and the Secretary.

The minutes of the previous meeting were read and approved.

Dr. Sturges read a very lengthy paper on the various kinds of lameness, and exhibited appliances which he had used in particular cases with success. After the usual discussion, the essayist was tendered a vote of thanks.

The President recommended the adoption of a regular scale of charges, but the matter was laid over for further consideration.

The first unpleasant duty of the Society was the expulsion of Mr. M. J. McHugh, for conduct unbecoming a professional man and a gentleman.

The President was elected to read a paper at the next meeting.

After the meeting closed, the members dined and spent a very pleasant evening at Diebel's restaurant.

THOMAS BLAND, *Secretary*.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular November meeting of the Massachusetts Veterinary Association was held on the 5th ult., and called to order at 8 P. M., when twelve members answered the roll call, and the minutes of last meeting were read and adopted.

The executive committee reported on an order of business, was accepted.

Dr. Soule's, of Hyde Park, application for membership was unfavorably reported upon by the executive committee, and the Secretary was notified to communicate the fact to him.

Dr. Byrne was appointed the next essayist. Subject, "Indigestion."

Adjourned.

The regular monthly meeting of the Massachusetts Veterinary Association was held December 3d, 1884, and called to order at 8 P. M., with W. Bryden in the chair, when the minutes of last meeting were read and accepted. Twelve members answered the roll call.

Dr. Soule was present, and anxious to find out why he was rejected. It was moved by Dr. S. Kally and seconded that a special investigating committee of three be appointed by the chair to inquire into the standing of the Columbia Veterinary College, and report at an early date. Drs. Skally, Housard and Osgood were appointed as this committee. A letter from Dr. Soule to the Secretary was then read, and it was moved and seconded that it be placed on file.

Dr. Byrne read an article on "Indigestion in the Horse,"* and after a general and heated discussion by the members, a vote of thanks was tendered him.

Dr. Bunker was appointed next essayist. Adjourned.

W. BRYDEN, V.S., *President*.

J. F. WINCHESTER, *Secretary*.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

The regular fortnightly meeting of the Montreal Veterinary Medical Association was held in the lecture room of the college on the 27th of November, at eight P. M. Mr. Wilcocks of Guelph, Ont., was elected a member.

Mr. Mayor communicated a case of flatulent colic which came under his notice last summer, and was treated by the operation of enterotomy, and proved successful. This treatment though not often resorted to in Canada, is frequently made use of by some American practitioners in the treatment of flatulent colic, and also by many English practitioners. If properly performed, there is little risk.

Mr. E. Wallis Hoare then read an interesting and well prepared paper on "Observations on the Examination of Horses as to Soundness." He first explained the difference between soundness in the legal sense and in a practical sense, showing that the veterinary surgeon has also to decide what interferes with the usefulness of the animal. He next described the method of examination which was made use of by the late Professor Dick, and proved the most successful of all. Also the defects and blemishes likely to be met with, and the importance of each, dwelling specially on spavin and coarse hocks, showing that they

*This paper will be published in full in our next issue.

gave most trouble in examining horses. He next described the method of testing for lameness and the wind, both of which are of the greatest importance. The advisability of the examiner always mounting the horse himself was also dwelt on. Also the importance of the natural conformation of horses, and the necessity of constant practice in order to be competent to form an opinion and be quick in observation.

A discussion followed on the different points.

The meeting then adjourned.

E. W. HOARE,
Member of Reporting Committee.

WISCONSIN VETERINARY SURGEONS' ASSOCIATION.

The annual meeting of this Association was held on the 11th of November at Racine. Quite a large number of members were present. The President, Dr. V. P. Atkinson, read a long interesting paper on the subject of obtaining legislative action to regulate and protect the veterinarians in the State, in which he strongly recommended the propriety of liberal propositions, so as not to exclude from the power of practice many worthy gentlemen who are now engaged in relieving the sufferings of animals. After the appointment of Dr. Ormond of Milwaukee; D. F. Holmes of La Crosse; C. Evans of Racine, and E. W. Rowland of Monroe, as essayists for the next meeting, the Association adjourned until the first Tuesday in May next, when they will meet in Milwaukee.

NOTICE.

ANNALS OF SURGERY.

A new journal, the *Annals of Surgery*, is announced for the new year, with Dr. L. S. Pitcher, of Brooklyn, and Dr. C. B. Keesly, of London, as editors.

Dr. Pitcher was the senior editor of the *Annals of Anatomy and Surgery*, published for a number of years; in fact, the new journal will in some sort be the successor of the other, which stopped publication in 1884.

Annals of Surgery will contain articles from collaborators in the United States, Canada and Great Britain; and, from the fact that it will be the only one of its kind published in the English language, ought to receive from the medical profession a hearty, welcome and handsome support.

CORRESPONDENCE.

ONTARIO VETERINARY COLLEGE.

TORONTO, CANADA, Nov. 25th, 1884.

Editor of American Veterinary Review :—

The introductory lecture at this college, for the session of 1884-5, was delivered by Prof. A. Smith, V.S., Principal of the College, on Wednesday, October 22d, when a large number of students were present.

There are 192 students registered at present. As the regular term commences in January, quite a number more are expected. The large numbers registered here and other colleges on this continent, are sufficient proof to the interest taken in, and progress of veterinary science.

The Veterinary Medical Society, in connection with the colleges, meets twice a week. The first regular meeting for the session, was held on Friday, October 24th, when the following were elected officers: President, Prof. A. Smith, V.S.; Secretary, William Wilson, Ballymoney, County Antrim, Ireland; Assistant Secretaries, Henry Piatt, St. Louis, Missouri, U. S., and A. L. Hunter, Hector, N. Y., U. S.; Treasurer, Charles H. Pierce, Grand Rapids, Michigan, U. S.; Librarian, Llewelyn D. Williams, Pontypridd, South Wales; Assistant Librarian, George Standish, Esqueezing, Ontario.

WM. WILSON, *Secretary*.

NEWS AND SUNDRIES.

BLACK LEG.—An enzootic, said to be black-leg, exists among cattle in Berks Co., Pennsylvania.

EPIDEMIC OF HYDROPHOBIA IN VIENNA.—A cable report, under date of November 26th, states that a veritable epidemic of hydrophobia is prevailing in Vienna. Already eighty cases have been reported.—*Medical Record*.

A PROLIFIC SOW.—John L. Smith writes to the Iowa Homestead that he has a sow that in June, 1883, dropped 11 pigs; in

November of that year she had 14; in May, 1884, she gave birth to 16; and in October last 14 more were added to her family, making a total of 55 pigs in less than sixteen months. Of these pigs 42 were raised. There can hardly be too many such in Iowa, at present.—*Prairie Farmer*.

ARTIFICIAL IVORY.—Sheeps' bones are macerated for 15 days in lime water, after which they are washed and dried. They are then placed in a closed kettle, with the addition of scraps of deer skin, and the mixture is heated by a current of steam, until the whole is transformed into a fluid mass, to which 2 to 3 p. c. of alum is added. The liquid is then filtered through cloth and poured into shallow moulds, where it assumes a certain consistency in contact with the air. The hardening is completed by immersing in a bath of alum. The resulting plates are white and hard, and may be wrought more easily than ivory. The material is susceptible of a very fine polish.—*Druggist Circular*.

AN OBSERVATION REGARDING MENSTRUATION IN ANIMALS.—Dr. S. A. Evans, of Conway, N. H., writes: "For several years past I have kept a non-pregnant cow, for the purpose of supplying my family with milk. Have kept a record of periods of heat. Find they recur once in twenty-one days. Are accompanied, first, by a discharge of gelatinous material from vulva, which, after some hours, becomes slightly tinged with blood. The color becomes gradually more pronounced, until within twenty-four hours it appears to be pure blood. Periods last about forty-eight hours. At these periods only can the cow become impregnated, which would seem to show that in her case ovulation and menstruation are simultaneous. These observations have extended through three winters, and in two different animals."—*Medical Record*.

THE CHEAPEST ANTISEPTIC.—M. Pasteur anticipates that bisulphide of carbon will become the most efficacious of all antiseptics, as it is also the cheapest, costing but a fraction of a penny per pound in large quantity. It is also the best insecticide known, and for this purpose may, perhaps, be useful to preserve wood-work in tropical countries. Some idea of the use it is already put to may be gathered from the fact that over eight million pounds of the substance are used annually to check the ravages of

phylloxera. Carbon bisulphide, as first produced, is about as foul smelling a compound as it is possible to find; but it is capable of purification till all offensive odor is removed, and it is sufficiently pure in smell almost to mix with a perfume.—*Scientific American*.

THE ANTIPYRETIC ACTION OF THE ALKALOIDS OF QUEBRACHO.—At the recent meeting of the French Association for the Advancement of Science at Blois, a paper was presented by Drs. Huchard and Eloy on this subject (*Le Progrès Médical*, October 4, 1884). There are many alkaloids of this drug, no less than six having been already isolated. Numerous experiments upon rabbits having demonstrated the antipyretic action of these alkaloids, the authors were led to make trial of them in the human subject. In a certain number of patients with typhoid fever, to whom quinine had been given with out effect, a notable reduction of temperature was obtained by the hypodermic injection of the muriate of aspidospermine in doses of one and a half to three grains. This latter amount should never be exceeded. The authors noted especially the rapid reduction of temperature following the exhibition of these several alkaloids, and also remarked upon the changes occurring in the blood after their administration. The blood is changed in color in a way very similar to what occurs after poisoning by carbonic oxide.—*Medical Record*.

ASEPTOL.—A phenol compound, termed orthoxyphenylsulphurous acid, has been recently introduced into therapeutics under the name of "aseptol," this title having been given to it on account of its remarkable germicide qualities, which excel those of carbolic and salicylic acids. Aseptol is an amber-colored fluid, of a density of 1,400; it has a slight odor, but is more pleasant to the smell and is less poisonous than carbolic acid. Last November, Drs. Leroy and Van den Shrieck, of Antwerp, studied the therapeutic applications of aseptol, and reported most satisfactory results as an antiseptic. It has the following advantages over antiseptics in common use: 1. It is very soluble in water. 2. It is very slightly caustic. 3. It is free from irritative qualities, and may be applied for a long time to the skin, the eyes, the bladder, etc. 4. Finally, its slight toxicity, which permits its use internally in considerable doses, and also the application of concentrated solu-

tions in diptheritic pharyngitis and laryngitis.—*La France Médicale*.

HORSE-POX—Dr. Blachez brought to the notice of the Academy of Medicine, an epidemic of horse-pox which lately took place at the Hospice des Enfants-Assistés. The malady was first observed in the nursery into which none but syphilitic infants, or those suspected to be such, are received. One of the infants had an ulcer on the lower lip with enlargement of the neighboring glands, and the ass that suckled it had a deep excoriation on the teat, which was noticed two days before the ulcer in the child. The animal so infected had for fifteen days suckled another infant that had an ulcer on the tongue, which naturally gave rise to suspicions of syphilis. That epidemic went on spending, when M.M. Fourmier and Bouley were consulted as to the nature of the prevalent malady. M. Fourmier was doubtful as to its nature, but M. Bouley, the well-known veterinarian, at once pronounced it to be horse-pox, the origin of which had to be sought for. It was noticed that another infant, who had been admitted twelve days previously, had both its arms covered with vaccine pustules which were dressed by the "infirmier," who, having his fingers thus affected, inoculated the teats of the suckling asses. Other asses were also similarly affected, which was sufficient to account for the origin of this strange epidemic among the infants.—*The London Lancet*.

THE MILK OF PREGNANT COWS UNFIT FOR INFANTS.—Dr. Ernest Mammen, of Bloomington, Ill., expresses an opinion below which is important if true, but which will be received with some incredulity. He says: "I have read with much interest the article by Drs. Binnie and Vidal in recent issues of *The Record* (September 13th and October 25th), and I heartily agree with these writers in their advocacy of cow's milk, fresh and pure, as the best substitute for mother's milk. But there is one factor which, in my experience, is often productive of harm that neither of them has mentioned. *The milk of the pregnant cow is unfit for consumption by the human infant*. This fact is too often overlooked, when by careful investigation the disturbance of stomach and bowels in cases of infantile diarrhoea could be traced

to the use of milk. Where mixed milk is used the danger is that a proportion of it comes from pregnant cows. All hygienic care of the animals cannot make up for this condition of the milk, neither can the addition of sod. bicarb., common salt, lime-water, etc., destroy the deleterious principle, therefore my rule is to avoid it. I have recently had under personal observation a child weaned at six weeks, and put upon cow's milk. A good healthy animal was selected, and her milk, with the proper dilution and additions, agreed perfectly for three months, and that, too, during the summer. At the end of this time the cow was found with calf, and the infant's digestion was immediately disturbed. An obstinate diarrhoea set in, which could not be controlled until another cow, not pregnant, was substituted, when the child recovered and digestion was restored. I could cite other similar instances, but the above illustrates the importance of this matter."—*Medical Record*.

EXCHANGES, ETC., RECEIVED.

FOREIGN.—Veterinarian, Veterinary Journal, Quarterly Journal of Veterinary Science in India, Annales de Medecine Veterinaria, Clinica Veterinaria, Archives Veterinaria, Recueil de Medecine Veterinaire, Presse Veterinarie, Echo Veterinaire, Gazette Medicale, Revue d'Hygiene, Revue fur Theierheilkunde und Thierzucht.

HOME.—Medical Record, Scientific American, Science, American Agriculturist, Breeders' Gazette, National Live Stock Journal, Turf, Field and Farm, Spirit of the Times, Druggists' Circular, Country Gentleman, Prairie Farmer, Practical Farmer, Ohio Farmer, etc., etc.

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CORRESPONDANCE.—Ch. I. Goentner, Thomas Bland, Dr. Gadsden, W. Pendry, C. B. Michener, J. Winchester, C. H. Peabody, W. R. Howe, J. A. Dell.

AMERICAN VETERINARY REVIEW,

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ORIGINAL ARTICLES.

INDIGESTION IN THE HORSE.

BY DR. BYRNE, V.S.

(A Paper read before the Massachusetts Veterinary Association.)

Mr. President and Gentlemen :

In human medicine there are few subjects on which more has been written, and in veterinary less, than derangement of the digestive functions. Most of the veterinary authors have dealt with the subject in a trivial manner, therefore what I am about to read to you this evening is chiefly from notes of my own experience.

It is true, the horse is not subject to anything like the variety of gastric derangements that man is; although, living in an artificial state, and on food in a great measure artificially prepared for his use, he is not allowed, like man, to overgorge his stomach and derange its functions by excesses in eating and drinking, smoking, etc., but, as a rule, has his food and water carefully dealt out to him in such quantity and quality as will generally insure him against dyspeptic attacks. Nevertheless, circumstances do occur, and these by no means rare, when the necessary attention is not paid to his diet, and serious derangement of his digestive apparatus is the immediate consequence. Before dealing with indi-

gestion, I shall endeavor to describe to you in as few words as possible, the process of *digestion*.

In the horse, as in other domestic animals, the digestive apparatus is constituted of a membraneous and contracted canal, which extends under the vertebral column from the mouth to the anus. This tube is lined by a mucous membrane, the organization and functional properties of which, in its *abdominal* section, are of the greatest importance, being the principal seat of the essential phenomena of digestion ; whilst the other parts, such as the *mouth*, *pharynx* and *œsophagus*, only serve to take, to prepare and to introduce the alimentary materials.

Digestion may be said to be the process by which those parts of the food which may be employed in the formation and repair of the tissues, or in the production of heat, are made fit to be absorbed and added to the blood. Pressed by hunger and thirst, (sensations which express the necessity of repairing the general and continuous waste of the system), the animal secures the food which he meets with, or is given to him ; previously, however, he takes care to subject it to an examination by sight and smell. Once in the mouth, the sense of taste must be satisfied ; whatever is offensive is rejected, the residue is ground down by the teeth, and, while undergoing this process, becomes thoroughly impregnated with saliva, and is thus reduced to a soft pulpy mass, which very much facilitates the next move, viz., that of deglutition, or the passage of the food from the mouth to the pharynx into the œsophagus, from thence to the cardiac end of the stomach, where it is mixed with a quantity of mucous, which prepares it to be acted upon by the gastric juice of the true digestive, or pyloric end of that organ. By the agency of this fluid, and the movement of the stomach, it is reduced to a semi-fluid consistency, and converted into a uniform pulp called chyme ; this is then transmitted through the pylorics into the duodenum, and then mixed with the bile, and the pancreatic secretion and intestinal mucous. It is then in a fit state to have its nutritious parts taken up by the lacteals, which form a close system of vessels upon the mucous surface of the intestines and to be carried by them to the blood, while the indigestible or excrementitious part is moved onward

by the peristaltic motion of the bowels and in due time expelled by the anus.

Having thus gone over, in a brief manner, the healthy functions of the alimentary canal, I am brought to the more immediate subject of my paper, viz: *indigestion in the horse*.

In order that digestion may be perfect and easy, it is requisite that the food should be in a state of minute division. A weak stomach acts slowly or not at all, on tough masses of solid food, and horses, like men, have weak and dyspeptic stomachs. The greedy feeder swallows a great part of his food half masticated; the nibbler frequently disturbs his stomach and bowels with gas. In the former, the delayed masses undergo spontaneous changes which are prompted by the mere warmth and moisture of the stomach, gases are extricated, acids are formed, and the half-digested mass passes undissolved into the duodenum, and becomes a source of irritation during the whole of its journey through the intestines. In the latter, (the nibbler) he disturbs his stomach and bowels so frequently with air, as to weaken the whole of the digestive powers, and to render him a dyspeptic subject. His rough coat, tight skin, and emaciated figure prove incontestibly that his food passes through the alimentary canal without undergoing due conversion, or without his deriving that benefit from it which the healthy animal does.

I will endeavor to consider this subject under two heads, viz: the mild form unattended by acute pain, called *chronic*; the other, which takes place suddenly, the symptoms of which are altogether more violent, and which is perilous to the existence of the animal, called *acute*.

In a state of chronic indigestion, a horse does not thrive as others do, nor is he capable of doing the same amount of work; his appetite is fastidious—good, and even vivacious at one time, and only indifferent at another; it is sometimes depraved; he is fond of gnawing his rack and manger, is frequently found licking the walls, if any, or whitewash off the partitions. I have frequently seen horses eat any filth, and sometimes their own excrement. The skin from sympathy with the alimentary canal, has an unhealthy appearance; the coat stares, and the animal be-

comes more or less hide-bound. The manure has not the natural appearance; at one time it is dark, and at another light colored, and has a very offensive smell. It is usually voided in small hard glazed balls, and if examined, will be found to consist of chopped hay and imperfectly chewed or chomped oats. In the stable this is the usual state of the fæces, but in his weak state the horse is easily excited when at work, and purging is the consequence. The urine is also scanty and high colored.

The ordinary seat, particularly of chronic indigestion, is the mucous membrane of the stomach and intestines, and the disease may be defined to consist of a congested state of the blood vessels of that membrane; there is, consequently, a want of the proper secretions, and constipation is the result. This torpid, or abnormal state may be produced by many causes, such as irregularity in the quality and quantity of the food, imperfect mastication of food in consequence of diseased or irregular teeth, or from greedy or ravenous feeding, long fasting from food and water, cribbing and quidding from irregularity in the teeth, or bots, previous attacks of acute indigestion, or irregular exercise, disease of the liver, etc. These are among the principal causes of indigestion in the horse.

There are few animals in their natural state, that are supposed to spend more of their time in feeding than he does; and the fact that he has no biliary receptacle, proves the necessity of his doing so, and ought to teach a lesson to all those who are interested in his well-being, to copy the dictates of nature by feeding him frequently.

A long fast renders a horse voracious, like the natural greedy feeder; his food is bolted without sustaining that thorough grinding with the teeth so essential to a healthy system. If allowed, he will sometimes overgorge himself with an indigestible mass to such an extent as to bring about the partial or entire suspension of the movement and secreting power of the stomach, and thus put his life in serious danger from fermentation and rupture.

Wheat or green food is most likely to produce this effect, and especially so, if he be put to severe work immediately, or very soon after feeding. New oats or new hay will also produce it;

also debility of the digestive organs, or an unhealthy state of the general system; or it may be caused by excessive fatigue, producing general weakness; cold water given in large quantities too soon after eating, by washing the ingesta from the stomach before it is properly chymified, will cause it; allowing the body to cool too quickly when warm; bad treatment; and so will irregularity of work or nervous excitement of any kind.

The symptoms of the acute form of this disease will depend altogether upon its particular seat. If the horse has overloaded his stomach, he will have excessive nausea, expressed by the drooping of the head, turning up of the nose, attempts to vomit, eructations, a slow weak pulse and great prostration and heaviness, distention of the abdomen and colicky pains. *There may* or may not be *sympathetic* affections of the *brain*, producing stupor and staggers.

There are many cases where this symptom is not present, though the stomach is distended to the utmost. The horse is frequently attacked in the middle of his work, becomes uneasy, and will lie down, and at times at full length, for a considerable period; the extremities are cold, the mucous membranes are not much injected, the bowels are constipated, the mouth dry and clammy, and the horse has a peculiar haggard countenance, which becomes more and more ghastly as the disease advances; should the stomach burst he becomes pulseless, cold sweats break over him, the mucous membranes are pale as in death, he makes frequent attempts to urinate and to force everything from the rectum, he reels, staggers and very soon falls headlong into a corner of the building and dies.

Although cases of acute indigestion, such as I have just described, where the disease is altogether confined to the stomach, are by no means rare, still the true seat of the great bulk of our acute cases will be found in the cœcum and colon, that mighty receptacle, which indeed, might be called the horse's second stomach, for it is indisputable that large masses of nearly indigestible matter lodge there, no doubt for the wise purpose of extracting from it the last particle of its nutritive properties; and it

is natural to expect that where there is the greatest accumulation of aliment, there should be the most frequent derangement of function, and so we find it, for in large practice the treatment of this form of indigestion becomes almost a daily occurrence.

The large masses so frequently accumulated in this part of the bowels, in the heavier classes of horses particularly, becomes a frequent source of irritation, producing enteritis; but far more frequently, that form of indigestion so well known to every amateur in veterinary science under the designation of flatulent colic. The causes of this form of indigestion are nearly the same as those which produce it in the stomach, and which I have enumerated before; but the most common are eating green food to excess, and if wet, the danger is greater. All kinds of new corn and hay have a great tendency to fermentation, or large masses of any indigestible matter, which has been imperfectly chymified from a defective state of the stomach.

If the horse be attacked in the stable, he ceases to eat, and seems to feel a disgust for all species of food and drink; the head is lowered and occasionally thrown from side to side; if he is at work, he becomes suddenly heavy and idle, or perhaps works with more precipitation than usual; he stops, scrapes with his feet and makes some contortions, and strives to lie down; consents to continue his journey only when excited by the voice of his driver and whip; he does not go far before he stops again, looks at his belly and groans, strikes at it with his hind feet, lowers the head and neck, and makes another effort to lie down in spite of whip and voice.

His driver will find it necessary to get him into some stable with as little delay as possible, for very soon the disease becomes aggravated; the paroxysms of pain become more frequent and violent; the horse is out of breath and covered with sweat; he lies down and rolls from side to side; the pulse as yet not much disturbed, except during the paroxysms; the belly is swollen; the nostrils are distended, and the whole frame seems to quiver with agitation; later on he sustains himself with more difficulty, spreads his legs to support himself upright, and will often be found to lean against the stable or wall for support. He now

lies down with more caution ; he dreads the danger of doing so ; he often stretches himself and makes vain attempts to pass his manure and urine ; feels a desire to vomit, manifested by the elongation of the head and neck ; he frequently belches up gases, which is sometimes accompanied with liquids, mixed with particles of food, which escape by the nose and mouth. The swelling of the belly now augments with fearful rapidity ; the right flank becomes elevated ; the countenance is expressive of the most intense suffering ; the pulse is nearly imperceptible ; he is now nearly insensible to everything that is around him, and to everything that you do to him, except, perhaps, that he will refuse to take any draught with all the energy with which he is still capable. The anus, forced out by the intestines, forms a sort of soft tumor which elevates the tail. The skin is now covered with cold sweat, and the pulse completely gone ; the air can scarcely penetrate the respiratory organs ; the blood circulates with difficulty in the vessels ; asphyxia becomes imminent ; the animal staggers and may fall heavily ; sometimes he is relieved by sitting on his haunches like a dog, but this relief is deceptive ; it is the result of rupture of the stomach, intestines, or diaphragm allowing displacement of gas. A moment after, he becomes comatose ; there is no further relief for him, his vital energy is exhausted, and he dies.

I now come to the treatment of the various forms of digestive derangements which I have endeavored to describe in this paper, and in doing so, it will be necessary that we consider carefully the causes by which they are produced. In all cases, but particularly in those of the milder form of indigestion, much may be learned from the groom or stable attendant, and it is of the utmost importance to the success of our treatment, that as much of the history of the case be got from him as possible.

First.—If the horse has been irregularly fed, or his work more than ordinarily severe, he should have absolute rest, change of diet, a slight dose of physic and a few vegetable tonics.

Second.—If the cause is greedy feeding, have his corn ground, hay cut, and a muzzle put on at night to prevent him filling his belly with indigestible matter.

Third.—If the horse is a cribber, let him wear a strap round his neck, and feed totally off the ground.

Fourth.—If the teeth are the cause, remove decayed ones, and the protruding parts of others cut off and rash down.

Fifth.—If from *bots* or other parasites, prescribe for their removal and the disease will subside.

Indeed, many of the milder cases of indigestion may be cured by rest, change of diet and stable management; the body and legs kept warm with clothing and bandages; the stall or box well fitted and kept clean; the food given often and in small quantities—in *summer* a vernal grass or green food—in *winter* carrots and half shorts or bran with his corn or oats. Occasionally small doses of physic followed with tonics. If the animal bites the walls or licks the lime of the same, or eats earth, it is indicative of heartburn. Discontinue his oats and corn for a few days and feed on boiled oats and bran mashes and bi-carb. soda in half to one ounce doses three times a day, and also, as in other cases, small doses of physic and tonics. Severe purging does harm, but mild laxatives with good nursing, change of diet given in small quantities, with moderate slow exercise, will often be all that is necessary.

Now, if the case be an acute one, and the stomach overloaded, it becomes a very serious matter, and it will depend in a great measure on the extent to which that organ is packed, whether any treatment be of the slightest use.

I have examined horses that have died of rupture of the stomach, and found upwards of forty pounds of food in that organ; the ingesta was nearly dry, and had no appearance of having been acted upon in the slightest degree by the gastric juice; that secretion must have been entirely suspended, as well as the movement of the stomach, by the excessive weight of its contents. Medical treatment in cases of this sort must, I fear, ever prove futile in the horse; but fortunately, they are not all so bad, and plenty of cases will be met with where the stomach is overloaded, but only to such a degree that active treatment is often efficacious. In such cases, the object to be aimed at is the expulsion of the contents of the stomach; and the most natural

way is to rouse that organ to increased action ; and to accomplish that I know of nothing better than stimulants and purgatives. Apply mustard, hot fermentations, *warm injections*, and order as much gruel to be given as he will take.

While the walls of the stomach are so distended, there is no danger of inflammation ; should there be any cerebral symptoms, such as heaviness of the head, leaning the head on the manger, or thrusting it against the wall, a good free bleeding should be added to the stimulants and purgatives.

If the disease should take the tympanitic or gaseous form, the cœcum or colon is its usual seat ; the cures for it are innumerable ; every quack has his own infallible specific, and most veterinarians have a remedy, which they think nearly a cure ; but although many cases no doubt are cured, still it is beyond doubt many die, and from gaseous distention alone, without a particle of inflammation. Like the previous cases I have dealt with, where the stomach is distended with food, expulsion is the object we have to attain. To have the bowels distended with gas, we must have fermentation, and to have fermentation there must be a mass of imperfectly digested matter in the gut. All agree giving the most powerful stimulants, and there are few who don't think it necessary to combine with them some active purgative.

I condemn the fashion of walking and trotting the animal in such cases.

In despite of all treatment, however sound, both in theory and practice, our cases will sometimes die, and others appear upon the point of bursting.

In such cases I have used the trocar in thirty-one instances, with nine successful results. I believe, however, if it were used earlier than it usually is, the results would be more successful.

WHAT WE HAVE BEEN—WHAT WE MAY BECOME.

BY DR. D. V. DIXON, D.V.S.

(A Paper read before the United States Veterinary Medical Association, Cincinnati, September 16th, 1884.)

On the ninth of June, 1863, a number of gentlemen belonging to the veterinary profession, assembled in convention at the

Astor House, New York city, with the object of organizing an association, whose membership should not be confined to any State or section, but which would have for its object the drawing together, in closer union, of all members of the profession wherever practicing in the United States.

Thirty-eight gentlemen composed the convention, and the result of their deliberations was a permanent organization, the adoption of a constitution and code of laws and the election of a board of permanent officers. In the minutes of their meeting we find that, "after considerable discussion the name, *United States Veterinary Medical Association* was adopted."

From the same source we learn that, "several interesting papers were read, after which the convention adjourned." It had remained in session two days, viz: June 9th and 10th, 1863, and must be considered the first regular meeting of the Association.

From this time forward, meetings were held annually, and after a time semi-annually, the third Tuesday in March and September of each year, the meeting in September being considered the anniversary meeting. These meetings have been held regularly up to the present time, alternately in New York and Boston, with the single exception of the year 1876, when the anniversary meeting was held in Philadelphia.

During this time the Association has accomplished a great deal. It has established a closer fellowship among its members than they otherwise would have enjoyed. It has held together the active workers of the profession, especially those of the East, and through their contributions to science, and their successful efforts to advance the profession in this country, it is to-day recognized as the representative body of the profession in America, wherever the science is cultivated in all the outside world. At home its leadership has been questioned, and in some parts disputed, but of the merits of its would-be rival many of you are better judges than myself, and to attempt comparison would not be becoming at this time. We do not claim infallibility; the Association has made its mistakes, as like institutions are bound to do, especially when the work performed is that of the pioneer. Although this is its twenty-first anniversary, its active member-

ship is not quite double what it was when the organization was effected. This evidence gives ground for the charge that has sometimes been advanced, viz: that while the institution was respectable, and contained many leaders of the profession in this country, it is lethargic and approaching decline. To-day the regular practitioners of the country number more than one thousand, and it seems no more than reasonable that the membership of the Association should reach far into the hundreds.

The idea of increasing the membership and extending the Association, was the principal argument used by those who advocated this pilgrimage, by which means we have had an opportunity to mingle with and become acquainted with our brethren of the West. No more fitting time could have been selected, for it is auspicious, that now as the Association has attained its majority it seeks new fields of labor.

Aside from the regular routine business, a glance at the future should not be forgotten, in order to determine the best means to extend our Association. The question, where shall we hold our meetings, that all may be done justice to, must be considered. Semi-annual meetings, held alternately in the East and West, will not be practicable. Should that be attempted, the Association will be exposed to one of two evils, and in a manner to both, viz: slim attendance at its meetings and a burdensome tax on the time and money of the individual membership. The question how to obviate this difficulty must be solved if we would reap the full harvest of the benefits that await us in the immediate future. One plan seems practicable; others may be suggested equally good and worthy of consideration.

By all means let the organization remain a unit, presided over by one officer as now, the President.

Let the Association be divided into an Eastern and a Western division, each provided with a full corp of officers, Vice-President, etc. These to constitute the "comitia minora" of each, with the additional duty of conferring together, whenever the welfare of the organization should require it, and at such meetings the President would be present to act as Chairman. With one constitution and one code of laws, with a common aim, viz: the advance-

ment of science and the union of the profession throughout our broad land, we would be strong to withstand attack and be able to accomplish more than the most sanguine might prophesy. At stated and reasonable times union meetings could be held at central points, which would be executive in part, and also as now, for the discussion of papers, etc. These meetings would be convenient times for the calling of Congresses of the profession of the United States. Already our constitution provides for the admission of delegates appointed by the various State and county societies; so that in the early organization of our institution we see some such plan as this foreshadowed. Our Association should continue to foster the State and county societies, but let its membership permeate all, and by this means we may some day see one grand union of the profession in this country, and the *United States Veterinary Medical Association* the central society.

TWO CASES OF COMPLETE OBSTRUCTION OF THE STENON DUCT.

BY J. C. MEYER, JR.

(A Paper read before the Ohio State Veterinary Medical Association.)

This accident, if I may designate it as such, is one of comparatively rare occurrence, but every practitioner of any reasonable amount of practice encounters this condition of things every now and then. At any rate, so frequently as to warrant special attention on the part of the veterinary profession, so that we may be enabled to detect and remove the cause at once, thus arresting an extensively destructive process. This is easily accomplished, as will be seen by the following report of two cases that have come under my observation within an interval of fifteen months.

Case No. 1 is a chestnut gelding aged nine years. He is brought to me June 10, 1883, with an extensively diffused swelling reaching from his left ear along the left parotid and buccal regions to the lips. It is rather firm and tender to the touch. His appetite is suspended, owing to the difficulty in mastication.

This being a purely local trouble, his pulse and temperature are not much altered.

June 12th.—The presence of pustules are already discernable by fluctuations in a number of spots along the swelling. These are accordingly evacuated. The discharged pus is of an offensive watery character, commingled with gases and debris tissue—a typical gangrenous condition.

June 13th.—Swelling decreasing, and pustules more numerous.

June 14th.—To-day I discover the origin of this trouble, which is nothing more than the presence of the top of a spear of timothy hay, lodged within the Stenon duct, at its entrance into the mouth, opposite the upper third molar on the left side. This obstruction I removed with ease, by taking hold of its short stalk and drawing it out, it being well saturated with offensive mucous, having the appearance of being lodged there a number of days. The seeds easily dropped off after being exposed to the air.

June 15th.—The destructive process seems to have reached its maximum. Suppuration is well established, and the swelling is diminishing rapidly. Sloughing of the skin over the entire left parotid gland is going on. Prehension and mastication are carried on with more ease.

June 18th.—All the dead tissue has by this time exfoliated, leaving a clean wound, studded with healthy granulations.

June 22d.—Suppuration is considerably checked. The healing of the wound is quite obvious. The horse is annoyed somewhat by the collection of food between his upper left molars and cheek. These quids, however, are easily displaced by means of a flat stick (a sweat scraper) whenever it becomes necessary.

June 25th.—The patient is discharged in a fair way of recovery. Instructions are given to perfect the closure of the wound.

Case No. 2 is a grey gelding of about fifteen years of age. He is brought to my hospital Dec. 3, 1884. The right side of his head is greatly swollen, involving the base of his ear, the parotid and buccal regions, also the orbital process to such an extent as to almost close his right eye. This swelling has been in progress for two days. I immediately made an examination of his

mouth. The examination was hindered, owing to the limited mobility of his temporo-maxillary articulation. With all the perseverance, however, I succeeded in introducing my hand into his mouth, and without searching long, I felt the stalk of a spear of timothy hay. This I secured between my index finger and thumb and extricated it without any difficulty. The seeds to a great extent had fallen off. An examination of the swelling reveals the presence of pus in several places. Gases are also perceptible by a crepitating sensation conveyed to the finger. An outlet is made for the effete substances by means of a bistoury.

Dec. 4th.—The discharge of a thin foetid pus is copious. Several new abscesses appear. They are also evacuated. Appetite is considerably impaired.

Dec. 5th.—A quantity of debris tissue is removed from the cavities of the abscesses, followed by an abundant flow of thick white pus. He opens his eye again.

Dec. 6th.—More defunct tissue is removed, swelling greatly diminishing, flow of pus is considerable, appetite improving.

Dec. 7th—10th (at which time he was discharged) nothing unusual occurred. He has been improving, and from present indications, he will be restored in the course of a week.

The most unpleasant feature about these cases of obstruction of the Stenon duct is the extensive sloughing of the skin, which requires a long time to repair.

Now in Case 2 no sloughing of the skin took place. The prevention of this, I ascribe to the timely removal of the foreign substances obstructing the duct, thereby arresting the destructive process to a great extent.

I am convinced, that if the obstruction be removed within the first twenty-four hours after its inception, no abscesses would be developed, and the case would terminate in two or three days.

I have, on various prior occasions, met with the same exaggerated state of affairs, where sloughing of the skin was very extensive. This might have been obviated had I detected the real cause of the obstruction.

POST-PHARYNGEAL ABSCESS—SUDDEN DEATH.

By F. H. OSGOOD, M.R.C.V.S.

On Sunday, the 30th of November, I was called to see a well-bred bay stallion, seven years old and standing fifteen hands three inches high. He had been in possession of the owner for about three weeks, one week of which he had been under treatment before I saw him. On examination all the symptoms of inflammation of the pharynx were present: appetite good, but unable to swallow, solids producing violent coughing spells, while fluids were thrown back through the nostrils; slight febrile symptoms; respiration was normal; no external swelling or soreness apparent; profuse discharge from nostrils, muco-purulent in character. I ordered warm poultices to be applied, with fumigation of the head with medicated steam, electuaries composed of belladonna and camphor, also a solution of chlorate of potash to be injected into the mouth.

November 30th.—Symptoms the same at six P. M.

December 1st, 9 A. M.—Nasal discharge more profuse. After repeated attempts patient succeeded in swallowing about four quarts of gruel. 5 P. M.—Deglutation less difficult; ate two quarts wet bran, drank four quarts lukewarm water.

December 2d.—Animal brighter, appetite good, ate all that was allowed, with but little difficulty; pulse and temperature normal. Treatment continued the same. All continued well till the morning of December 4th, when I found slight elevation of temperature, discharge from nostrils diminished, with no desire on the part of the animal to touch solid food, and could swallow but sparingly of liquid. Chlorate of potash gargle replaced by chlorine water spray; treatment otherwise the same. 6 P. M.—No improvement. Quinine and hydrastin ordered given three times daily.

December 5th.—Symptoms favorable. Took small quantity of nourishment; nasal discharge more profuse.

December 6th.—Respiration, temperature and pulse normal, extremities warm, animal bright, appetite good and a reasonable

quantity of nourishment was taken, but with great difficulty throughout. Repeated examinations of the pharynx were made by means of the speculum; no abscess discovered. Nasal discharge continued profuse and without odor. Blisters were tried without effect.

All continued the same till January 5th, when solid food was again refused. I then made an examination and behind the soft palate discovered a swelling which I supposed to be a post-pharyngeal abscess.

Dr. Liautard, called in consultation, confirmed the diagnosis. He had also recognized the presence of a swelling pressing downwards the posterior wall of the pharynx, but did not think the fluctuations sufficiently marked to justify opening with the knife. The post-mortem confirmed the wisdom of this, as it proved afterward that surgical interference would, in all probability, have given only unsatisfactory results.

The same treatment of warm poultices, fumigation, soothing electuaries and artificial feeding was continued. On Tuesday, the 8th, no nutrition was taken by the mouth; artificial feeding increased; animal wasting rapidly.

Friday, January 9th, the groom reported that the animal breathed heavily all night; pulse 100 and very weak. Died Saturday morning.

Post-mortem.—But two important lesions were found: 1st. Slight congested spot on the lower third of the right lung, and 2d. The abscess in the head. The lower jaw having been removed, the lingual canal cleared of its contents, and the pharynx being opened, showed no signs of disease. The mucous membrane of the guttral pouches was depressed downwards towards the partition wall of the pharynx and infiltrated. The muscles attached at the inferior face of the sphenoid and the perystaphyleus muscles were infiltrated. On the right side of the base of the cranium there was an abscess as large as a good-sized apple, situated in the condyloid fossa of that side of the head, filled up with a mass of hardened, blackish cretaceous suppurations. When the cavity was well washed of its contents the bones were found the seat of extensive caries, the condyloid fossa, the corresponding styloid

process of the occipital and the upper border of the sphenoid being involved; even the internal face of the occipital towards the condyloid foramen showed signs of the diseased process. All the other organs were found healthy.

VETERINARY FRAUDS.

BY JAS. ALLBRIGHT, V.S.

Reading the REVIEW articles relating to veterinary frauds and bills to protect the veterinary profession, I thought proper to write a few lines on the subject now under controversy. There is no room for doubt but that there are a great many frauds practicing. Some of these frauds have diplomas to show to their patrons. These I consider the worst of frauds. There is no doubt but they get them from some private institution very limited in veterinary teachers. Money bought the sheep skin, without study or much brain work. This kind of fraud is far worse than the self-made horse doctor that does not have ready tact for the business. The graduate should be one from a responsible institution chartered by the State, and fully equipped with an efficient force of veterinary teachers. The graduate from this kind of school will be fully prepared to successfully combat the diseases peculiar to the equine race. The self-made veterinary surgeon of the past was something that was needed, for there was no other way to meet the wants of the agriculturists. The evidence we have of some of the work done by the self-made horse doctors is very good. They have educated their minds with study and practice. They, as the graduates of a school, practice from a standpoint of principle, not of witchcraft and old sayings. The principles which they are governed by are taken from the records of some of our foremost writers on the veterinary art. Our country is making progress in this direction. There is no need now of self-education in this direction. We have colleges of a responsible nature that will produce veterinarians and not quacks. Let every American interested in the welfare of our stock, encourage these schools, and before long the quack will be something of the past. If the

dumb and innocent animal could talk, there might be a great amount of quackery exposed that now is in the darkness. Yet, in my practice I have discovered a great deal of cruel and barbarous treatment based on nothing to support them. It takes a great amount of study and practice to fully overcome this terrible evil—quackery. I think it right and proper for the legislators to enact laws to protect this branch of industry, for is it not a great benefit in more ways than one, for does it not save life and money both? Then why not protect it? Every other branch of industry is protected, but this one is under par. This is not right nor proper to men spending their money and time, besides lots of brain work, for something as yet in low standing in society. The time I think is near at hand when this will be remedied by our law makers.

My claim as a veterinary surgeon I acquired with my own effort in that direction, with fifteen years of diligent study and practice, but if the law is so passed as to shut me off, or that I am not competent to prescribe for the sick and dying animal, I will gladly throw up the sponge.

EDITORIAL.

REGULATION OF VETERINARY PRACTICE.

With the reopening of the Legislatures of the various States of the Union, veterinary surgeons are again considering the propriety of seeking to secure from their State governments laws to protect them and to regulate the practice of veterinary medicine. Several of the State societies and associations have already set to work with this object in view, and the New York State Associations have within a few days also entered upon the same line of action. For several years past the veterinarians of this great State have made attempts to secure the enactment of bills in their interest, by the Legislature, but for various reasons have failed—on account probably of the divisions which have existed amongst the members of the profession. To-day, however, the chances seem to be in favor of success, for the veterinary societies and associations of the State have at last agreed upon the frame of a bill which seems

to secure the object desired, and to harmonize the various sections in existence.

The subject was already under discussion by each individual society, when, to try to bring all interested parties to a satisfactory understanding, a meeting, composed of the committees of these societies, was called to meet at the American Veterinary College. At that meeting the frame of a bill was agreed upon to be presented before a mass meeting of the societies represented.

That meeting was held on the 9th of January. Each section of the proposed bill was discussed, adopted, and is now in fair way to be sent to the Legislature. For the benefit of the veterinarians who were not at the meeting, we publish it in this issue and gladly offer the pages of the REVIEW to those who may desire to make remarks upon it.

As will be seen, there are three principal sections in the bill, the object being, in general, to regulate the practice of veterinary medicine, with special provisions looking to the ultimate extirpation of quackery in every form.

Section two makes it imperative for all veterinarians to be regular graduates or holders of a certificate of membership of a legally incorporated society or association in existence for five years; the certificate having been granted one year previous to the passage of the act.

Section three makes it imperative that all who do not come up to the requirements of Section 2 shall have been practitioners for ten years, and shall pass a proper practical examination before they can be allowed to continue practice.

Section four prescribes how the examinations are to be regulated, the Board of Examiners being elected partly from the societies and associations, and partly by those so chosen electing a member from among outside practitioners.

No objection can be made to the first two sections.

Section four, however, may be objected to, and we are afraid is going to produce a poor impression or give strong evidence of our lack of harmony, when it comes to be considered that the discussion upon that section occupied the greater part of the meeting and that when it was voted upon, opposition to its ac-

ceptance was made by quite a number of the members of the convention—a minority it is true, but quite numerous nevertheless.

At the informal meeting held at the American Veterinary College, it had been agreed unanimously that one society alone should form the Board of Examiners—the Board of Censors of the N. Y. State Veterinary Society. A change in the opinion of some who voted for this arrangement brought on the result referred to. The reasons for which a unanimous vote had granted the power to examination to the Board of Censors of the N.Y. State Veterinary Society were, that it would show better feeling; that in the eye of the Legislature it would simplify the work; that this society was the oldest in the State—the first one organized, and that by this action a union or amalgamation of the existing State organizations could be brought about.

Why these reasons, good on Tuesday, proved bad on Friday, cannot well be understood. It is, however, to be greatly regretted. The New York State Veterinary Society in this whole transaction had shown herself disposed to make any sacrifice to secure harmonious feeling and friendship; she had met in a fair and honest manner; she was decided, and is yet decided to go with the majority; the bill which has been agreed upon was framed by one of her members and had already been discussed and accepted by her; there was no good reason to go back on the decision of the committee, and the graceful manner in which she submitted herself in all the movement ought to have been sufficient to preclude any such expressions as fell from the lips of one of the veterinarians at the meeting, who exclaimed that unless the Board of Examiners should be voted as it afterwards was, he would fight the bill to the bitter end and use all means possible to kill it.

At any rate the frame of the bill is now adopted. Some twenty or twenty-five veterinarians of New York, Brooklyn and vicinity have said so. Let us hope it will be accepted throughout our State. If we succeed it places us upon a standing which we could not probably obtain at a later period. The medical profession has had great difficulties to overcome in obtaining its present position before the law, and it has only partly succeeded

in its aims. The veterinary profession is yet small in number. These can therefore be easier harmonized and as—after the examination of the few that are yet without certificates—examinations which, according to the word and spirit of the law, must take place with six months from the passage of this bill, the Board of Examiners will cease to have reasons to exist. No new crop of self-made veterinarians will rise. The final result for the State of New York will be that none but regular graduates will be engaged in the practice of veterinary medicine. This happy time may be far off, but the importance of the result is worth waiting for for the few years necessary to pass before it is realized.

POST-PHARYNGEAL ABSCESS.

Under this name we publish this month the report of a case which we have seen in consultation with the author of the report, Dr. Osgood. The length of the disease, its peculiar features, its fatal termination, and the post mortem examination will no doubt render it most interesting to our readers.

The definition of post-pharyngeal abscess as given in Williams' Surgery, will probably not cover the lesion found in this subject, but that which we generally found in works of human surgery proved beyond a doubt the correctness of the diagnosis. According to Quain, "it is a collection of pus which connects the pharynx with the muscles lying upon the vertebral column, namely the longus colli and the vastus anticus-major." One of its common causes being a caries of the cervical vertebræ or of their cartilages.

If we bear in mind the anatomy of that region in our solipeds, the position that the pharynx occupies, the presence of the mucous membrane which forms the guttural pouches, and the distance between this organ and the cervical vertebræ, it can be easily appreciated that simple idiopathic caries of some of the bones of the base of the cranium must also be, as in this very case, considered as one of the principal factors in the development of that affection. The treatment which is recommended in the classical work in surgery, viz.: the puncture of the abscess through

the mouth, could never have been entertained in this case. The only possible chance of relief would have been by a dissection under the superior extremity of the parotid gland—an operation that, besides the difficulty presented by the complicated anatomical structures, could scarcely have been successful, taking into consideration the disease of the sphenoid and of the occipital bones. There can be no doubt that the reported numerous cases of post-pharyngeal successfully treated either through or at the lower end of the parotid, were nothing else but collections of the guttural pouches or deep sub-parotid abscesses.

OBSTINATE CONSTIPATION.

The case reported by Dr. Ryder, as extracted from the book of reports of cases of the Hospital Department of the American Veterinary College, offers in its description many interesting features.

If one takes into consideration the fact that this animal remained for twenty-nine days in that condition without having a single passage, and only by being relieved of a handful of calcareous mass, remaining unmoved by not only all the agents indicated for its relief, but without any benefit from the administration of eserine administered to him twice, it must be considered as probably one unique in its character and one in which the paralyzed condition of the muscular coats of the intestines must have been the principal acting agent of the difficulty. The peculiar corking condition of the fecal matters at the junction of the large and floating colon, justified to a very great extent the supposition of an obstacle to defecation in the presence of intestinal calculus.

REPORTS OF CASES.

FOUR OBSTETRICAL CASES FROM A NOTE-BOOK.

BY C. H. PEABODY, D.V.S.

On the 13th of July, 1882, I was called to see a Scotch terrier bitch that had given birth to a small dead pup in the morning. I found her lively. Made an examination per vagina, as well as

the smallness of the pelvis would allow, being only able to introduce my little finger. I could not detect any more pups. The next morning she was lively and played as usual, and continued so until the 19th, when she was taken with sharp pains, and in about half an hour gave birth to another live pup. Both mother and little one have since done well.

On the evening of January 6th, 1884, I was called to see a setter slut, which during the day had given birth to two live pups, but since four in the afternoon had been straining, and would not whelp. I found her exhausted, being hardly able to stand. On examination per vagina, I discovered wedged into the pelvic cavity the back of a pup. On inquiry I was told that the owner had tried to assist her and had pulled on a foot he had got hold of, so hard that he had pulled it out from the body of the pup. He had then tried to shove the fœtus in, and then failing, had sent for me. I gave the bitch brandy and milk of each $\frac{3}{4}$ iii, then with a pair of obstetrical dog forceps, guided by my index finger, I ripped up a section of the skin, shoved the pup well forward, and getting a good hold of the nose, got the head straight. Then with a good, strong, steady pull, delivered of a whelp with one fore and one hind leg gone, both having been pulled away by the owner. The slut being exhausted, I left orders to give brandy and milk, a tablespoonful every two hours during the night. Calling next morning, I found five more lively little ones and the mother doing well. The question arises in my mind, is it not better, after removing the obstruction, to let such patients alone for a few hours and not be too hasty in trying to deliver, in case there should be any whelps left.

A CASE OF DISTOKIA.

On May 19th, 1884, I was called to see a small terrier, which had been sick for twenty-four hours. She weighed about eight pounds, and was in labor pain, and I so informed her mistress. But she would not believe me, and informed me she had not been exposed. I informed her that I could not help that, but such was

the case, and on enquiry of the boy whose duty it was to lead the animal for exercise, he stated to me that she had been lined by quite a large bull terrier. By the fetor I diagnosed a dead foetus. On examination I found a breech presentation. By careful manipulation I got a small fine wire over the pelvic bones and a string to each hind foot, when, with a steady pull, I got the body and forward extremities out, but the head resisted. Taking a curved needle I passed it through the neck as close to the vulva as possible, and passed through a stout piece of twine, by which I separated the body from the neck as close to the vulva as I could. Then pushing the head forward with a pair of spoon forceps having a well curved shank, by external manipulation I succeeded in getting hold of the head and crushing it. Repeating this process three times, I then drew on the string and removed the head without any trouble. Feeling nothing more, I gave a good stimulant and left, having been engaged about two and one half hours. Next day the animal looked well. I drew milk with a breast pump. Her condition improved until the eighth day, when she became very dumpish and refused to eat or drink, and the tenth day I made an autopsy. I found all the organs healthy, but in the right horn of the uterus I found an ulceration about one and a half inches long and half an inch wide, which had perforated the walls of the organ. In order to get rid of fetor its mistress had injected a solution of carbolic acid and rose water into the vaginal cavity. I would say I found quite a lot of fluid in the abdominal cavity. Was this done in trying to crush the head, by getting a fold of the uterus between the blades of the forceps, or was it done by the end of the metallic tube used on the end of the syringe? And again, would it have been better, as the foetus was dead, to have had recourse to the Cæsarean section to get rid of the head?

A SEVERE CASE OF DISTOKIA—DOUBLE PREGNANCY.

On July 14th, 1884, I was requested to see a large Dutch cow which had been sick for three or four days. I was told that she had received about two gallons of different stuffs, that she had frequent pains and was about eight months pregnant. By the fetor and

vaginal examination I made the diagnosis of the presence of a dead foetus. The neck of the uterus was hard and rigid. Taking a piece of hose pipe and a funnel, I introduced one end of the rubber into the vagina and gave a good thorough washing to that part. Then cutting a piece of dry compressed sponge into a wedge shape, I introduced it into the os as far as I could. Ordered her fed on sloppy food, and gave her a stimulant of gin and milk every four hours.

On the 15th I removed my home-made sponge-tent, and had no difficulty in introducing my hand through the os. Another tent was cut, larger than the first, and used as before. The contractions of the womb being very weak, the animal received ergot in 3 ii doses every four hours.

On the 16th the introduction of both hands through the os was comparatively easy. The contractions were stronger, but I thought it not yet advisable to try to remove the foetus. Same treatment ordered continued.

18th. Strong contractions intermittently appearing. Ergot ordered every six hours.

19th. The os is flabby and dilated to its fullest extent. Labor pains quite hard and frequent. Examination revealed a vertebro-pubic presentation. Cutting an incision through the skin of the foetus and pushing it well forward with the handle of a fork pressed in it, I began to control the dead mass, getting hold of one forward extremity and bringing it outwards and securing it with a rope. I then tried to get hold of the head, but failed. Various efforts were made to secure it by pushing the foetus forward, but I failed to succeed, as the foetus lay on its near side with the head doubled under and between the front extremities. I then concluded to cut off the neck as near the body as possible. Taking a small steel hook and getting a solid hold through skin and muscles, I secured a rope to it, and when good and steady traction was put on began to cut from upwards downwards until I came to the bones of the neck. Then I passed the blade of my knife as far under as I could and cut up, continuing to do so until I had separated the bone. After much trouble I succeeded in separating the head and neck from the trunk. The head was

then pulled out. It was enormous, measuring $28\frac{1}{2}$ inches around at the base of the ears. Then having with the hook secured another good hold of the stump of the neck, I pulled upwards as well as I could and proceeded to the cutting of the leg which had already been secured, dividing well down on the scapula and extending my separation towards the neck. By tearing the muscles I got the scapula free and by hard manipulation came to be able to cut the skin clear to the knee, where the leg was disarticulated. Calling upon my assistants to stand upon a box close by, I directed them to pull on my hook and the fold of the skin hanging, and thus raise the foetus. By this process succeeded in getting hold of the other leg, which was not without difficulty brought out and secured. Pulling then with hook, skin and leg, the remains of the carcass were brought into the pelvic opening, but could not be extracted. Letting it go forward a little, so that I could get my hand and arm in, I plunged my knife deep into the abdominal cavity of the foetus, and cutting forward on it until I came to the sternum, which I divided close to the neck; then, letting one side of the chest shut over the other, with a long, strong and last steady effort, the remains were all removed.

Another examination showed the pressure of another foetus with a breach presentation. Without much trouble both hind extremities were secured, and a good pull by two men soon had it lying beside its brother.

What remained of the placenta was cleared out, the womb was well washed, the cow given a pint of whiskey and milk and left alone.

The next day she was bright, ate well and has continued so since. Both calves weighed 186 pounds.

LARGE FATTY TUMOR OF THE GREAT MESENTERY—STRANGULATION OF THE INTESTINES—DEATH.

BY I. MICHENER, V.S.

I was called at five o'clock on the 16th of Dec., 1884, to see an aged horse that had always appeared to be well until the night before, when he was taken with pain so severe that through the

course of the night, in pawing and rolling, he broke the manger and stall into pieces. Symptoms: temperature slightly elevated, expanded nostrils, short respiration, which was particularly striking and unusual for any disease of the bowels. Continued abdominal pain. Diagnosis: obstruction in the small bowels, giving rise to inflammation of the same. Through the course of the day it was evident he was getting worse. In the evening I prognosticated death by the morning, which took place about 7 o'clock, A. M., on the 17th.

Post-mortem. On opening the abdomen, so that the small intestines were presented to view, a pear-shaped tumor was presented, to the neck of which was attached what appeared to be a peritoneal membrane enveloping the upper and smaller part of the tumor, without being at any point attached to it, leaving it free to vibrate like a pendulum. This membranous sack was thrown together at the upper end like the drawing strings of a money purse into a flat tough membranous band about one and one-half inches wide and long enough to be lapped twice around the bowel, and then spread out or radiated, forming a finer membranous substance which I think was attached to the mesentery.

Here I must digress to make an apology for saying that I think it was attached to the mesentery, because I should be able to say whether it was or not, and further I should have examined in every particular to have made an intelligent and interesting report, which I did not do. As soon as I discovered the tumor, I severed its band that surrounded the bowel without stopping to look for its attachments (or from whence it originated), and whilst I was looking at the tumor those standing by plunged bowels and horse into his grave together, which cut off all further examination. It was the jejunum that was strangulated with the membranous ligament having lapped twice around it. This must have been done by the motion of the horse in traveling; the weight of the tumor (three pounds) flapping up and down had jumped the bowel twice. For the width of one and one-half inches of the bowel around which this band was lapped, the bowel was not more than one-fourth of its normal size, having the appearance of an old rope that had been tied in a hard knot for a long time. The mucous

membrane of the intestine for two feet each side of the band was enormously distended with congestive inflammation, beyond anything of the kind that I ever saw. The omentum greatly inflamed and ragged. The peritoneum was not affected worth noticing. The colon had several blushes of inflammation scattered over it; the stomach and duodenum were greatly distended.

OBSTINATE CONSTIPATION OF TWENTY-NINE DAYS DURATION—
DEATH.

By J. E. RYDER, D.V.S., House Surgeon American Veterinary College, Hospital Department.

The subject of this case is a chestnut gelding, five years of age, used for saddle purposes. While ill with pneumonia of the left lung, had become convalescent after ten days of treatment, and was exercised previous to being allowed to resume his work. On the third day following his recovery, and as he was discharged, information was received that since the night before he had not passed any feces. At that time everything about him was normal, his pulse, respiration and temperature, but he showed now and then a slight colicky pain. Little anxiety was felt concerning his case, and a pint of linseed oil with one ounce tinct. opii was administered, with directions to place him on low diet of sloppy food. The next day, Dec. 6th, he was in about the same condition, his pains a little more frequent, no defecation. Seven drachms of aloes was given and tinct. of opium prescribed as the pains indicated.

On Dec. 7th there was no change; no action of the bowels; colics quite continuous. He was very restless, laying down and getting up. He was then sent to the hospital, where he presented the above mentioned condition. The treatment prescribed for him consisted in the administration of opii. and belladonna to allay his pains, and in rectal injections three times a day.

Dec. 8th. The treatment had brought negative results. The abdominal pains were better and not so frequent or severe; he would now and then place himself in one corner of his box-stall and paw repeatedly; he would lay down carefully and at times stretch himself flat on his side. Same treatment was ordered con-

tinued, with a drench of two quarts of soap suds and walking exercise when the colics should be too severe.

On the 10th and 11th the rectum, which theretofore had been constantly empty, was relieved of a small handful comprising three or four balls of a gray mass, calcareous and very brittle.

On the 12th no improvement being obtained, he received hypodermically two grains and a half of sulph. of eserine without any result. This was renewed the next day, giving rise to the general effects of the medicine, some slight nervous excitement, and strong contractions of the muscles of the abdomen, with profuse perspiration, but with no effect upon the intestinal action. No fœcal matters were passed off by the rectum.

On Dec. 14th his pulse had risen to 88, his respiration 24 and temperature to $103\frac{3}{4}^{\circ}$. No change having been obtained by the treatment of the previous day, with the injections—which were continued, he was given four drachms of aloes, two of belladonna and eight ounces of linseed oil. The colicky pains having disappeared, the opium was stopped.

From this to the 19th, the animal's general condition seemed to improve, his symptoms were better, he had some appetite and partook of some liquid and sloppy food. He had no colics, but still had passed nothing.

On the 20th the colics reappeared; no change otherwise. The case of constipation was undoubtedly becoming complicated with paralysis of the muscular coat of the intestines. Quinine and nux vomica in drachm doses, with alcoholic stimulants, were prescribed three times a day.

On the 24th the temperature and pulse had come down to 101° and 70 respectively. The treatment was changed to podophyllin grs. v ., pulv. aloes gr. xv., sulf. quinine grs. xx, nux vomica z iss, thriaca z ii, aqua z iv., given in drenches three times with injections as usual.

This treatment was kept up until January 2d, and no improvement was noticed. On that morning a last attempt was made to soften the fœcal impackment of the colon, and an eight-drachm ball of aloes was given in the morning. He showed no change during the day. In the evening had some slight abdominal pains, and

died during the night, having been twenty-nine days since the last action of the bowels.

During his illness he had two large bed sores, one upon the left elbow and the other at the right temple. These were very large and gave him much pain, but were in rapid condition of cicatrization when he died.

Post-mortem.—After removing the skin of the abdominal walls, there was found a laceration about six inches in length, through the muscular portion of the great oblique of the abdomen on the near side. The abdomen, when opened, was found inflamed all through. The intestines were removed and laid on the floor; appeared greatly congested throughout their whole extent and rupturing upon the slightest manipulation. The large colon was filled with softened fœces in its two first portions. When reaching the diaphragmatic curvature it was found filled to its greatest capacity with hard, dry fœces; and when reaching toward the small colon a large mass, dry, calcareous in feeling, pointed-like shape, was firmly pushed into the first part of the small colon, with the base continued into and resting on the end of the large. This cork of fœcal matter measured thirteen inches in length, was two feet nine inches around at its base, eighteen inches as it entered the small colon and thirteen inches at its apex; it weighed ten pounds.

The remaining organs were found healthy.

EXTRACTS FROM FOREIGN JOURNALS.

CONTAGIOUS MAMMITIS IN COWS.

During six years, that disease had existed in a dairy. It assumed a chronic form and was characterized by indurated nodules and *hard lumps* in the glands. It is known that dairy-men frequently renew their stock by replacing a cow that has a tendency to become dry by another freshly calfed. But in this case, the new cows, after being introduced into the stables, did not remain long without becoming affected with the same mammitis.

The owner had already used a large quantity of external ap-

plications when he decided to call Messrs. Mollereau and Nocard. At that time, out of twenty-five, ten cows were more or less affected. Thinking it might be tuberculous mammitis, the milk was carefully examined, but no trace of the bacillus of Koeh could be discovered. In its place, a spinal organism, of very small dimensions, agglomerated in mass to form a long, regular rod, strongly colored by aniline preparations, very distinct from the *lactic ferment* of Pastenr, was cultivated in milk, chicken broth, etc., and propagated extensively.

It seemed certain that this organism developed itself in the thickness of the diseased mammae and by direct experiment of the introduction of the liquid of culture into the teat of a cow, the disease soon manifested itself in the udder of the animal. The same inoculation in the teat of a goat and in that of a slut gave a similar result in the first and a negative in the second.

The conclusion naturally being that this organism was the cause of the disease, and that this extended by eontagion, sanitary precautions were ordered, viz. : that the person in charge of the milking should wash her hands and the teats of the cows with a phenic solution at three per cent. previous to the operation ; this washing being made every time the operation was to be made on a new animal. The milk of diseased animals was forbidden for human food and given to the pigs.

Diseased cows were treated by the injection in each teat of blood-warm solution of boric acid at four per cent. once for two or three weeks in succession. This was followed by excellent results and the glands returned to their normal function.—*Receuil de Mede. Veterinaire*.

✓ ECHINOCOCCUS IN THE TIBIA OF THE OX.

BY MR. RALLIET.

This is a pathological rarity. The tibia of an ox was entirely filled in its medullary cavity by a hydatid tumor, with all the characters of a tœnic echinococcus. The animal from which it was obtained was in perfect condition of health, and presented no other indication of the presence of the parasite. Two similar

cases have already been observed in England, in bovines, and one in France, in the horse.— *Recueil de Medec. Veterinaire.*

CURIOUS ANATOMICAL ANOMALY. STRIATED MUSCULAR TISSUE
IN THE SUBSTANCE OF THE PNEUMOGASTRIC NERVE.

BY DR. GRATIA.

This was found in an old animal used for dissection at the school of Brussels.

One of the pneumogastric nerves presented in the middle of the cervical portion a fusiform enlargement, from eight to ten centimeters in length, and of a thickness corresponding to thrice that of the normal nerve. The enlargement was formed of two portions, viz.: one, white, representing the tissue of the nerve; and another, red, band-like, simply adhering to the first at its middle, but mixing entirely with it at its terminal extremities.

DIAPHRAGMATIC HERNIA IN A MARE.

BY MR. CARETTE.

An animal suffering with colic had been taken shortly after her midday meal of meal, that she had taken with avidity. Supposing a simple case of indigestion, treatment was ordered to that effect and directions to report as to her condition if not better in three or four hours. It was not until after thirty-six hours that, seeing no improvement, medical attendance was again looked for, and when the animal was seen at this second visit a fatal prognosis was given. The poor brute had suffered much; the pulse was small, thready, 120; no fœces; gangrene of the intestines existed. Death took place the next morning. At the post-mortem a hernia of the diaphragm, of long standing, probably a year, was found. In the left half of the muscle, there was an oval opening, running to the phrenic portion, with thin, smooth borders, hard and of a fibrous consistency. This opening measured five centimeters in length, two and one-half to three centimeters in width. Nearly a yard of small intestines were passing through it; it was gangrenous and adherent to the surrounding parts.— *Annales de Brussels.*

PELVIC HERNIA IN A WORKING OX—LAPAROTOMY—RECOVERY.

BY MR. MATHIEU.

A large ox, suffering with colic since midnight, was brought to the author, who after a superficial examination, considering the case as one of simple colic, ordered a simple treatment. In the afternoon, the animal not improving, the case was taken into more careful consideration. His pulse and respiration were accelerated, the mucons membranes injected, the abdomen somewhat tympanitic, the fœces dried and coated, urine scanty and dark, continued abdominal pains, complete anorexia. Rectal examination showed an intestinal mass, very large and distended with gas, in front of the pubis and a little to the right. This was painful to the touch and could not be displaced.

A diagnosis of intestinal strangulation was correct; but what was its true nature? Pelvic hernia was thought of, but could not be positively established. The next day the animal was in about the same condition—colics were not so violent; no improvement of the bowels had taken place. Forty-eight hours later the animal was undoubtedly worse, the pulse being very small and accelerated; mucons strongly injected; muzzle dry; extremities cold; thick mucosities, without excrements, are thrown out of the rectum; gangrene is progressing. The operation of laparotomy was decided upon.

The animal was thrown on the left side, the right flank carefully shaved off, and a large incision made through the abdominal walls. The hand introduced into the abdomen felt the intestines twisted three times round the right spermatic cord, in a greatly inflamed condition, with thickened walls and its external surface covered with a thick grayish exudation, principally at the point of strangulation. Being unable to untwist the intestine from around the cord, it became necessary to tear that organ in two. This done, and the intestine free, the exudation covering it was carefully removed, the membranes rubbed softly to stimulate the circulation, and the parts returned to their position. The wound of the abdomen was closed with a double suture.

The animal soon began to improve, rumination returning

towards the sixth day, and the entire cicatrization of the wound being complete twenty-six days from that of the operation.—*Annales de Brussels.*

INTELLIGENCE OF ANIMALS.

(Extract from the *Revue Scientifique.*)

IN CATS.—One morning, in 1884, my cat came in my bedroom, holding a bird which he had caught. As soon as he entered he let it go, evidently with the intention of playing with it, as cats often do with mice before killing. The bird having a wing broken could not think of flying away, but bravely fought his enemy, striking on the nose with his beak as hard as he could. The cat found his master and retreated. Since that time both lived in harmony. They ate, slept and walked about together. Often they were seen going about, the bird on the cat's back, and sometimes even held by the cat in its mouth, but released at first request. One day, however, the bird flew away and brought to an end this brotherly friendship.—*Emile Bouant.*

IN DOGS.—I had two dogs, a large setter and a small terrier, the first as large, the other as small as they are found in these breeds. They were always with me. Once the mayor of the town thought proper to prevent dogs from going freely in the streets. They had to be muzzled or held. Following the request partly, I went out with the setter held with a rope, but the terrier was left free. When I stopped at the place where I was going the big dog was attached to the foot of a table to prevent his going about, and the little terrier allowed his liberty. Full of play as she was, she began to run about in the large room where I was, calling her big friend to come with her. He tried, but finding himself secured he gave up the attempt. Then the small dog went to the rope and began to gnaw it, and would have succeeded had not my attention been brought to it. I changed the setter from one place to another, and at every change she kept coming back to cut the cord, which she always was careful to gnaw at the same place. She had at last succeeded. The passive conduct of the setter, which was very intelligent, made a great con-

trast with the anxiety of the terrier, to whom I had never been able to teach anything.—*L. Davy.*

IN HORSES.—In 1862 I was called to attend a ten-year old male which had an enormous abscess at the left elbow. I opened it, and the animal recovered. In March, 1864, the same animal was sick with a gourmy sore throat. She would not allow anyone to approach her, even chasing her owner out of the stable, whenever I was there with him. In October, 1869, she became lame with chronic sprain of the tendons of a front leg. Brought to me in harness, she would not let me come close to her. A friend of mine, a veterinarian, whom I requested to examine her, was permitted to do so without any trouble, but as soon as she saw me she became uncontrollable. Her harness was then put on her and she was placed between the shafts of a wagon with her head towards it and her hind quarters where her head ought to have been. She then let me handle her and even operate her without difficulty. Evidently she remembered the operation performed on her in 1862, and was bound to revenge herself if she had the opportunity.

IN DOGS.—In 1867 a friend of mine, a butcher, while chopping off meat, let his knife drop upon the nose of his dog, which was close by him picking up the small pieces of meat falling on the floor. The nose was hanging only by a small piece of flesh and was bleeding freely. Being called to see him, I immediately sewed it with a continued suture, and after a few days the animal was cured. Since that day it became impossible to enter the house of my friend, and when the dog would see or hear me he manifested his gratitude by significant growlings. During five years after, until he died, he evidently proved that he remembered the pain he had endured when I tried to save his nose.—*Emile Thierry.*

SANITARY CONDITION OF DOMESTIC ANIMALS IN THE STATE OF KANSAS.

Extracted from the First Annual Report of State Veterinarian,
Dr. A. A. HOLCOMBE.

GLANDERS AND FARCY.—Sixty-seven counties in the State have reported glanders. Reports of new cases from new local-

ities are constantly coming in. About half of our communications are in regard to this disease. Our reports show that 1,739 suspected cases of the disease exist in the 67 counties making report. It is safe to say that from one-third to one-half of these cases will prove to be something else than glanders. I think then that of these suspected cases there are at least 869 of them glanders. That this number represents all the cases of this disease in the State is quite doubtful, since we generally find in a county, on making an inspection, that there are as many cases unreported as reported. Being distributed over so wide an extent of territory, the danger of infection to other animals is not only increased, but the labor of exterminating it is made many times greater.

TEXAS FEVER.—One hundred and forty-eight communications have been received on this subject. Thirty-seven counties reported this disease during the summer and autumn just past. The estimated number of deaths, according to these reports, is 3,983.

HOG CHOLERA.—Forty-nine communications have been received relative to the diseases of swine, 47 of which were upon the subject of hog cholera. These 47 correspondents reported the death of 9,584 animals from this disease. The principal losses have been confined to a few counties, and the mortality from this cause is probably greatly in excess of the figures above stated.

BLACK LEG.—From forty-six counties 1,904 cases of black leg have been reported. I am of the opinion that these figures represent but a small proportion of the actual losses in the State. Of the seventy-six communications received in relation to this disease, but few have requested an investigation—the great majority asking for information as to the proper preventive measures to be adopted.

TUBERCULOSIS (LUNG CONSUMPTION OF CATTLE.)—I have been called to see but two cases of this disease during the year. One case was in its last stages, and could readily be made out.

HYDROPHOBIA.—Twenty-eight reports on hydrophobia have been received. I have some doubts as to the correctness of the diagnosis in some of these cases. On the 13th of June I saw a

cow belonging to John Patch, of Lyon county, supposed to have been bitten by a rabid dog some time previously. She presented all the symptoms belonging to the disease, and died after a short illness. The deaths from this disease are reported as follows: Dogs, 74; horses, 18; cattle, 49; sheep, 12; hogs, 17. How best to prevent the spread of this disease is a question well worthy of consideration.

VETERINARY LEGISLATION.

AN ACT TO REGULATE THE PRACTICE OF VETERINARY MEDICINE AND SURGERY IN THE STATE OF NEW YORK.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. No person shall practice veterinary medicine or surgery, or any branch thereof, in this State, for compensation, or shall either directly or indirectly receive or accept for his services as a practitioner of veterinary medicine or surgery, any fee or reward, except he be duly registered as hereinafter provided in the book kept for that purpose in the office of the Clerk of the county in which he resides.

§ 2. No person shall be entitled to register as such practitioner unless he be a graduate of a legally incorporated veterinary college or university, or shall hold a certificate of qualification from a legally incorporated veterinary society, organized at least five years before the passage of this Act, and such certificate shall be issued at least one year previous to January 1st, 1885.

§ 3. Any person who has been continuously practicing veterinary medicine or surgery in this State, as a means of livelihood, for a period of not less than ten years immediately preceding the passage of this Act, without having previously obtained a diploma or certificate from a legally incorporated veterinary college, university or society, as provided in section 2 of this Act, shall be allowed to register as hereinbefore provided, upon making and filing with the Clerk of the county in which he resides, an affidavit proving that he has been continuously

practicing veterinary medicine or surgery for the period hereinbefore prescribed, and by passing a satisfactory practical examination by the Board of Examiners hereinafter designated.

§ 4. Such Board of Examiners shall be composed of five members, two of whom shall be designated from the New York State Veterinary Society, two from the New York State Veterinary Medical Association and the fifth shall be chosen by the four members already designated. The Board of Examiners shall meet twice a year, or oftener if necessary, at stated times and places, for the examination of applicants. With each application filed with the Board of Examiners shall be deposited the sum of twenty-five dollars, which shall be forfeited should such applicant not be granted a certificate. Should such certificate be granted, the applicant shall pay to said Board of Examiners the further sum of fifty dollars.

§ 5. The County Clerk of each county shall provide a book, to be known as the veterinary medical register, in which shall be recorded the name of the applicant; the name of the college or university granting his diploma, or the society granting his certificate, or should the applicant not present such diploma or certificate, then the Clerk shall file the affidavit prescribed in section 3 of this Act, and the certificate of qualification granted by the Board of Examiners, after which such applicant shall be permitted to register in like manner as if he had presented a diploma or certificate from a veterinary college, university or society, and shall be entitled to continue the practice of veterinary medicine or surgery. Every applicant who shall have complied with the foregoing provisions and shall be admitted to registration, shall pay to the Clerk of said county the sum of two dollars, which shall be received as full compensation for such registration.

§ 6. Any person who shall knowingly present to the Clerk for the purpose of registration, any diploma or certificate which has been fraudulently obtained, or is in whole or part a forgery, or shall wilfully make affidavit to any false statement to be filed or recorded, or shall practice veterinary medicine or surgery, without conforming to the requirements of this Act, or

shall otherwise violate or neglect to comply with any of the provisions of this Act, shall be guilty of a misdemeanor, and shall for each and every offense be punished by a fine of not less than fifty dollars nor more than two hundred and fifty dollars, or by imprisonment in the County Jail for a term of not less than ninety days nor more than two years, or by both fine and imprisonment.

§ 7. This Act shall take effect immediately.

REVIEWS AND NOTICES.

School Hygiene in relation to its influence upon the vision of children; or, *School Sanitation*. By A. W. CALHOUN, M.D.

Third Annual Announcement of the School of Veterinary Medicine of Harvard University.—Shows the progress made by that department, and the usual information to intending matriculates.

Stud Book Mulassier.—A circular issued by a commission formed by several departments of France, where the breeding and raising of mules forms one of the principal revenues of those departments.

Opening Announcement of the Veterinary Department of the University of Pennsylvania.—Presents the requirements for admission, length and course of studies, etc., etc., with the address delivered by the Dean of the Veterinary Faculty, Prof. R. S. HUIDEKOPER.

Bulletin du Comité Consultatif pour les affaires relatives aux Epizootics, etc., etc. By J. M. WEHENKEL.

This forms the second part of the second volume, and is a pamphlet most interesting to read. Not only treating of diseases pertaining to sanitary veterinary medicine, it also gives the reports of numerous special interesting cases, which renders it almost a resumé of pathology for the cases attended to. We shall reprint some of these in a future issue.

First Annual Report of the Live Stock Sanitary Commission and State Veterinarian of the State of Kansas.

This pamphlet presents to the readers a long statement relating to the condition of the live stock of that State. Following the report of the State Commission, which covers the first ten pages of the pamphlet, the balance of the volume is occupied by the report of State Veterinarian Dr. Holcombe. Naturally the first disease which the reader would expect to find is the outbreak of last March, regarding which so many different veterinary opinions were given. It is mentioned as the Neosho Valley Disease. Everybody remembers the sensation produced by the news that foot and mouth disease had appeared in Kansas, and everyone is familiar with the opinions expressed, not only by private practitioners, but by official veterinarians in this country and in Canada. In his report, Dr. Holcombe presents what seems to be a different state of affairs than would be expected from the reports already published, and, after some pretty hard remarks, concludes nearly in the same manner as he did at first, making only the exception "that the only reason he had for believing that it was not continental foot and mouth disease, is the fact that sheep and pigs would not take it." The confirmation of the disease by Prof. McEachran is commented upon by Dr. Holcombe as strengthening an opinion which he yet thinks was correct.

Glanders and farcy, Texas fever, contagious pleuro-pneumonia, hog cholera, anthrax, tuberculosis, contagious ophthalmia in cattle and hydrophobia are the various contagious diseases which are also mentioned in the report.

The Anatomy of the Horse.—A dissection guide. By J. McFADYEAU, M.B., C.M., B.S., Lecturer on Anatomy at the Royal (Dick's) Veterinary College, Edinburg.

A Manual of the Theory and Practice of Equine Medicine. By J. B. CRESSWELL and ALBERT CRESSWELL.

These last two books were received too late for review, but will be considered in our March number. W. R. Jenkins, the veterinary bookseller of New York, has the publication of both in the United States.

COLLGE COMMENCEMENT.

ONTARIO VETERINARY COLLEGE EXAMINATION.

The December examination concluded on Thursday, December 23d, when the following gentlemen, third session students, passed a final examination and were awarded the deploma of the council: J. J. Irving, Hoekley, Ontario; W. I. Oliver, Brampton, Ontario; Albert Curtiss, Limcoc. Ontario; George F. Kelly, Markham, Ontario; A. F. McMaster, Maryland, U. S.; D. and K. Seltzer, Havana, N. Y., U. S.; I. E. Campbell, Alliance, Ohio, U. S.; Fred. O'Brien, Laskay, Ontario; E. D. Hayden, Syracuse, N. Y., U. S.; W. A. Meredith, Jamestown, N. Y., U. S. M. O'Brien, passed with great credit. Messrs. Meredith, McMaster and Oliver, with honors.

SOCIETY MEETINGS.

NEW YORK STATE VETERINARY SOCIETY.

A special meeting, by order of the President, was held on Tuesday, Dec. 30th, 1884, at the American Veterinary College, to take urgent action on the question of legislative law, and to hear important communications received by the President of the Society.

Members present were Drs. Dixon, Burget, Johnson, Bath, Pendry, Waters, Walton, Newman, Ryder, Allen, Parsons, Cuff, Jackson, Liautard, Robertson, Cattanaach, Coates, Burden, Foote, Crane, Duane, L. McLean, Wray, R. McLean and Devoe. The President, Dr. Liautard, in the chair. who in stating the reason of the meeting, read a letter he had received from the President of the New York State Medical Veterinary Association, in reference to legislative law, stating they were going to hold a meeting on the 9th of January, to which all veterinary surgeons were invited, expressing the wish that a unity of opinion be reached on the subject, and asking that a committee of the Society meet a committee of the Association, with a view of framing a bill which would be acceptable to all members of the profession, etc.

After the reading of the letter, it was thought best to read and discuss the drafts made, three of which were laid before the meeting: one by Dr. A. McLean, and two by Dr. Pendry. The principal clause of the former was that non-graduates be allowed to register on proof of ten years' practice. One of the latter was much to the same effect, except that it was a shorter bill. The other provided that they should be in practice for five years and pass a practical examination before a Board of Censors. After the reading of the three drafts, it was decided to take up the draft made by Dr. R. McLean, as it had been before the committee on legislative law; but Dr. L. McLean strongly opposed it on the ground that it did not call for an examination. A long discussion took place, when a motion was made by Dr. L. McLean, and carried, changing the draft to that effect, nineteen members voting for the motion and six against. The clause was finally adopted calling for an examination and five years in practice. The remaining

clauses were not of material interest, except Clause 3, which provided, when finally adopted, for the Board of Examiners.

On motion, a committee of eight was appointed to meet a like number of members of the Association, as described in the letter received. The President, in naming the committee, called attention to the wish for harmony as expressed in the letter he had received. He considered it a very hard matter for harmony to exist when there were three societies in the State, and the difficulty would remain until two of the three societies had passed away. All members of the profession would have to be admitted on the same equal footing. It was not for him to say which of the two societies should be blotted out; perhaps age would be a guide, and the New York State Veterinary Society was certainly the oldest; some means, he hoped, could be presented by which this could be arranged. Providing the passage of a bill that called for an examination, who were to be the examining board. It would perhaps be unjust to ask any faculty to act. If we were only one body, it would be an easy matter, the bill could call for members of the State Society to act. The committees, as appointed, met on January 6th, when each were asked to lay before the meeting their respective drafts of bills, but it was found that the one that had been discussed by the members of the N. Y. State Veterinary Society was the only one present. It was on motion re-discussed, section by section. The first objection was made by members of the committee representing the N. Y. County Medical Society asking to have the certificate of membership issued by them to its members placed on the same footing as a regular issued diploma, and so recognized, so that their members could register without undergoing an examination. There was quite a strong opposition by those present, who considered a large fee had been charged for membership, and insinuating that they had been issued freely. Dr. R. W. Finlay said this idea was entirely wrong. Members, before being admitted to membership, had had to give proof that they had been ten years in practice, and they had to undergo an examination before a Board of Censors. No certificates had been issued for over a year, nor were any more going to be issued.

After this there was a better feeling on the question, resulting in all certificates issued over one year by societies of five years' standing being recognized. On reaching the clause which provided for the formation of the Board of Examiners, there was a dead stop. Dr. R. W. Finlay stating that that clause should so read that the Board should be appointed by the State Society, and only one. If the bill was sent to Albany with a provision that it be composed of members of several bodies, he thought that in itself would kill it, and he wished some arrangement could be made by which this could be done. A reply was made that this could easily be done if they would agree that there should be only one. Prof. Liautard said they had got to the point he had long been wishing to get at. He considered one society for the State was enough. Where there were two or three it was impossible to have an harmonious feeling. If there was one good State society, we would be quite a strong body, have large meetings, and there would be a much better feeling among the profession generally. The only question of any difficulty that presented itself, was which of the three organizations should absorb the other two. The New York State Veterinary Society was, by considerable, the oldest, it had done good work, and why not they take that into consideration, join that society, and let it be the only one in the State.

Dr. R. W. Finlay said for one, he was quite willing to do this, and thought it would be a good thing, but the only trouble would be, would that society recognize the National Veterinary Medical Association.

Dr. Plageman, President of that organization, said he did not see how this could be done, the State Association was affiliated with the National Association.

Dr. Pendry conceded that both committees had come together with about the same idea. The only difference being that one had made up its mind to try and swallow the New York State Veterinary Society. They had come prepared to take everything and give nothing; he thought they had undertaken more than they could do.

The discussion waxing warm, a motion was made and carried that, the question as to how the Board of Examiners should be appointed, and as how an agreement could be made by which there would be only one society. That sub-committee was then appointed, being composed of Drs. Plageman, R. A. McLean, Liantard, R. W. Finlay, Robertson and R. A. Finlay.

That sub-committee at once met, the result of which, they reported that the whole difficulty had been solved, the Board of Examiners, as called for in the bill, were to be named by the New York State Veterinary Society, and the other two organizations would join that one. The meeting then adjourned, with the understanding that they would meet at a meeting of the New York State Medical Association on the following Friday, which took place, both committees being present. The draft of bill was discussed again section by section, and on coming to the section that the sub-committee had acted and agreed upon, one of its members, Dr. Plageman, made a motion that the Board of Examiners be appointed from the *two* organizations, instead of the *one as agreed* upon. Dr. R. W. Finlay, another of that sub-committee, strongly advocating the passing of that motion. Dr. R. A. Finlay alone advocating the adoption of the reports of the sub-committee, and an amendment to this effect was made, but the Chair would not put it to the meeting, until he had got a fresh motion made and carried, that ignored the report of the sub-committee. The other sections were considerably altered, and finally adopted, and referred to Drs. R. A. McLean, Plageman and Cattnach, Sr., as a joint committee, to have it put in proper legal form, and send it to Albany.

On January 13th, the New York State Veterinary Society held its regular monthly meeting, when the action of their committee was reported, and the draft of bill read as amended at the meeting of the 9th. Dr. L. McLean said he had conceded many things at the last meeting, a bill had been agreed upon by the joint committee, and asked why they should accept any alterations made by another body. Dr. Berns considered the Society had acted most liberally, and conceded largely.

Prof. Liantard said Section III of the bill had been unfortunately so altered as to make it in all its bearings and standing, an entirely different bill; he had gone to the meeting at the Cooper Union, fully expecting that what had been agreed upon by the committee would be carried out; as an officer of the Society, he however, advocated and recommended that all members work and unite with him in helping the passage of the bill as even agreed upon at that meeting. He had come to the conclusion that the Board of Examiners was not a Board that would be required to act for life; he thought two or three meetings would be the most

that they would be called upon to have, and so it mattered little, after all, from what body they were appointed; one thing he would strongly recommend, that the bill as agreed upon be presented as a bill coming from the New York State Veterinary Society. If the bill was not altered, as it now stands, we ought to do all we could to have it passed; if it was altered in any way, we should just as strongly work against it: it would have to be watched, as gentlemen who counted their word as nothing could hardly be trusted.

After several motions were passed, one to the effect that the subject of legislative law be dropped, and another, that Dr. R. McLcan represent the Society on the joint committee, and act, in his judgment, to the best interest of the Society and the veterinary profession at large, the subject was brought to a close.

At the opening of the meeting, Dr. Geo. H. Berns was elected as a member, and the name of Dr. John F. Mustoe was nominated, which nomination was referred to the Board of Censors.

Meeting then adjourned.

W. H. PENDRY, *Secretary*.

OHIO STATE VETERINARY MEDICAL ASSOCIATION.

The second annual meeting of the Ohio State Veterinary Medical Association was held at the parlors of the Burnett House, Toledo, President Dr. W. C. Fair, of Cleveland, presiding. In the absence of the Secretary, Dr. D. P. Yonkerman, of Cleveland, was elected Secretary *pro tem*.

At the morning session Dr. Townsend, of the State Agricultural University, Columbus, addressed the meeting, giving some observations made during a tour abroad among the agricultural schools and veterinary institutions of Great Britain and Scotland. He spoke of the pleasant intercourse existing between agriculturists and veterinarians and the exalted social position of the latter as compared to this country; also of the thoroughness of education and examination in European institutions.

Dr. Pooley, of Toledo, also addressed the meeting. He spoke of the relations of the domestic animals to man, the necessity of caring for them, and also of the obstacles sometimes thrown in our way by members of the medical fraternity, which he regretted, as he not only considered the veterinary profession essential, ennobling and humane, but necessary and of vast monetary importance to the commonwealth.

Among the other visitors present were Dr. Sutherland, President of the Michigan Association; Dr. Dell, Secretary of the same; Dr. Hawkins, of Detroit, and Dr. Shaw, of Park Hill, Ontario.

At the afternoon session Dr. White, of Delaware, read a paper on influenza, which led to an interesting discussion. The following officers were elected for the ensuing year: President, J. V. Newton, Toledo; 1st Vice-President, J. C. Meyer, Cincinnati; 2d Vice-President, D. P. Yonkerman, Cleveland; 3d Vice-President, W. Howe, Dayton; Recording Secretary, J. M. Waddell, Columbus; Corresponding Secretary, W. C. Fair, Cleveland; Treasurer, T. B. Hellock, Columbus; Board of Censors, W. Deer, W. Howe, L. B. Chase.

A committee composed of Dr. Chase, of Berlin, Dr. Yonkerman, of Cleve-

land, Dr. Meyer, of Cincinnati, Dr. White, of Delaware, was appointed to enquire into the cause, nature and sanitary measures to be pursued in connection with new and contagious disease which may occur throughout the State.

Dr. J. C. Meyer then read a paper on "Obstruction of the Stenon Duct in Horses." The meeting then adjourned to meet in Cincinnati, June 1st, 1885.

CORRESPONDENCE.

VETERINARIAN WANTED.

Dear Editor :

I think Hackensack would afford a good business to a veterinary surgeon of experience and character, as there is no regular practitioner in the county (Bergen.)

If there is one wanting to locate whom you could recommend, I would be glad to introduce him to those most interested in his coming.

Respectfully,

D. ST. JOHN, M.D.

PROFESSIONAL HONORS.

By decree of his Excellency, the Minister of Agriculture of France, dated December 27th, 1884, Prof. A. Liautard, of the American Veterinary College, has, amongst others, been decorated Chevalier de l'ordre du Mérite Agricole.

NEWS AND SUNDRIES.

ANTHRAX IN OHIO AND INDIANA.—A correspondent of the *Ohio Farmer* reports that cases of anthrax have occurred in his herd, and the *Indiana Farmer* contains a letter stating that a number of young cattle in Tippecanoe County, Indiana, died this fall of the same malady.—*Prairie Farmer*.

ERGOTISM IN INDIANA.—Lawrence County, Indiana, cattle are suffering from ergotism. This is the disease that was mistaken about a year ago by those not well acquainted with ailments of cattle, for the highly contagious foot and mouth disease. It will

be remembered that Dr. N. H. Paaren, Illinois State Veterinarian, declared as soon as he saw the cattle afflicted by this disease, in Illinois last spring, that it was ergotism.—*Prairie Farmer*.

INFECTIOUS OSTEOMYELITIS.—Dr. Rodet has found that when the micrococci of the pus in cases of osteomyelitis are injected into the venous system of rabbits, and therefore free to choose their seat, they show a marked preference for the bones, and more especially for those parts which are in process of active growth, where they set up a severe suppurative or necrotic form of osteitis analogous to osteomyelitis in man.—*Medical Record*.

THE MOST POWERFUL ANTISEPTICS.—Studied by their power to prevent the development of micro-organisms in sterilized broth, the biniodid of mercury stands at the head of the list of antiseptics. It is three times as strong as the bichloride. A solution of a $\frac{1}{1000}$ strength renders life impossible to any form of microbe, says M. Miguel, while of bichloride the strength must be $\frac{1}{1000}$. Iodide of silver is also more powerful than the bichloride of mercury.—*Medical Record*.

INSPECTION OF HOG PRODUCTS ABROAD.—Secretary Frelinghuysen has instructed the American ministers to England, France and Germany to secure all the information in their power in regard to the system of inspection of hog products in the countries to which they are respectively accredited, and any other information on the subject of discrimination against American hog products abroad. It is expected that replies from these ministers will be received at Washington in time for the convention of swine breeders and pork dealers, to be held in that city on the 14th.—*Country Gentleman*.

SNOW WATER IMPURITIES.—Under the heading of "The Beautiful Snow," the *Microscope* points out the kind of organic impurities found in snow, which very conclusively shows the fallacy of the idea that melted snow forms a good substitute for distilled water. The impurities are as follows: Living infusoria and algæ, bacilli and micrococci, mites, diatoms, and great numbers of fungi spores; also fibres of wood, mouse hair, pieces of butterfly wings, skin of larvæ of insects, cotton fibres, pieces of

grass, epidermis, pollen grains, rye and potato flour, grains of quartz, minute pieces of roofing tile, and bits of iron and coal.—*Scientific American*, October 11th, 1884.

TUBERCULOSIS OF THE EYE.—The *Revue Médicale*, October 18th, 1884, gives the case of a child who, eight weeks after an injury to the eye, showed cheesy masses on the conjunctiva near the external canthus. On microscopical examination they were found to be tubercular infiltrations. The same journal also contains the following general remarks regarding ocular tuberculosis. The eye may be invaded by tubercle either primarily or secondarily. Every part of the organ where vascular tissue occurs may become the seat of tubercle. Thus it has been found in the iris, choroid, conjunctiva, and once or twice primary tubercle has been observed in the retina. The ciliary body may also be invaded by primary or secondary tubercle, the latter usually following a tubercular granuloma of the iris.

FATAL LUNG DISEASE.—A Mr. J. J. Ingalls, residing near Dresden, in Muskingum Co., O., lost no less than thirteen cattle in a single day from a malignant disease of the throat. The matter coming to the knowledge of a local newspaper, the opinion was published that the malady might be the dreaded lung plague. But, on inquiry, I learn the facts to be, that the lot of steers affected were purchased last spring at Chicago, and had been on the same farm and doing well ever since, until about two weeks since this malignant inflammation of the throat suddenly appeared, the cattle dying in twenty-four hours from its first appearance. The steers were, at the time, running in the stalk fields. Is this another outbreak of ergotism? It certainly has not the slightest resemblance to pleuro-pneumonia, and I understand it has already disappeared.

DO CALCAREOUS CONCRETIONS OF THE LUNGS CONTAIN BACILLI?—The Paris correspondent of the *British Medical Journal* writes that M. Dejerine has made a series of researches to ascertain if the bacillus of tuberculosis is present in the calcareous concretions, surrounded by a zone of interstitial pneumonia, often observed at the apex of the lungs of old people. There are different varieties of these concretions; some are as

hard as stone, others calcareous and cheesy, or as soft as pulp. In veritable cretaceous concretions, M. Déjerine only once ascertained the presence of two or three bacilli; these were used for inoculating rabbits, which, after seven months' interval, were entirely free from tuberculous lesion. In the calcareous cheesy masses the cretaceous concretion is always in the centre of the cheesy portion. M. Déjerine invariably detected bacilli in the non-calcareous part, and they contained more spores than the bacilli of a tuberculous lesion in the process of evolution. These remains of an arrested disease of parasitic origin are of special interest, as an examination may establish the distinction between the cheesy calcareous masses of tuberculosis, and similar degenerations found at the necropsies of syphilitic patients. M. Déjerine observes that the absence of bacilli does not necessarily prove that tuberculosis does not exist; he has been unable to detect the presence of a single bacillus, although the necropsy clearly demonstrated the presence of tuberculosis. M. Malassez says that the spores of bacilli appear or disappear according to the coloring substance used. If fuchsine be used they assume the appearance of unbroken rods; if gentian violet, of spotted rods or a row of seeds. This difference of aspect may be interpreted in two different ways; it is possible that the substance which unites the seeds or spots can be colored by fuchsine and not by gentian; it is also possible that the appearance is an optical effect due to the nature of the coloring substance.—*Medical Record*.

EXCHANGES, ETC., RECEIVED.

Besides the usual medical, veterinary and scientific papers, with which we exchange at home and abroad, the editor acknowledges the receipt of the following manuscripts: on *The Rupture of Venis*, with the report of a case in which the rupture of a deep femoral vein was successfully treated by ligation of the ruptured vessel, by H. B. Sands, M.D.; *The Practical Treatment of Abdominal Hernia*, by W. B. De Garmo, M.D.; *Bulletin and Memoires de la Société Centrale de Médecine Veterinaire*, par H. Bouley and P. Cagny.

Communications were also received from W. Pendry, C. H. Peabody, J. E. Ryder, J. C. Meyer, Jr., D. Dixon, F. H. Osgood, J. Allbright, I. Michener, D. P. Yonkerman, Prof. A. Smith, D. St. John, M.D., C. B. Michener, A. A. Holcombe, Dr. J. A. Dell, W. R. Howe, J. Lindsay.

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ORIGINAL ARTICLES.

AZOTURIA.

BY DR. ROGERS, OF WESTVILLE.

(Paper read before the Association at Trenton, N. J., Dec. 10th, 1884.)

I purpose to-day to call your attention to Azoturia, the hæmoglobinuria of the Germans. The first notice of this condition in English-speaking literature is found in Haycock's contribution to veterinary pathology—article, Hysteria.

Haycock observed the disease only in mares, and was led to the conclusion that it was an abnormality of the sexual function somewhat analogous to lymphomania. Subsequent writers have shown that it is almost as frequent in horses as in mares.

Symptoms.—These follow usually in a well worn groove. The horse after a number of days of confinement, during which time he has received his usual allowance of highly nutritious food, is taken out to drive; he goes well up the bit, indeed the driver often remarks that he could hardly hold him at times; then, without premonition he falls in the shafts, unable to rise with or without assistance. The animal, retaining all his powers of mind, exhausts himself in fruitless struggles to rise, breaks out into a profuse perspiration, and if urine is discharged during this time it is usually dark in color, coagulating rapidly on cooling. Sometimes this condition persists until death, at others the symptoms ameliorate.

orate almost as rapidly as they show themselves. There is swelling of the glutei, hard and board-like in appearance. The horse is usually well on the road to recovery or dead within forty-eight hours. The temperature is elevated.

Differential diagnosis—The conditions liable to be confounded with azoturia are apoplexy, simple paralysis due to nervous lesion, spinal and cerebro-spinal meningitis. From apoplexy it may be distinguished by the retention of the sensory functions, the absence of oral breathing and the character of the urine. From simple paralysis, by the fact that in azoturia neither sensation nor motion are totally in abeyance, and again by the characteristic urine. In paralysis caused by obstruction of the iliacs, examination of the aorta post and its quadrifurcation will establish the diagnosis, and abnormal coldness of one or both hind legs will lead the practitioner to make such examination. Again the urine.

From cerebro-spinal meningitis it may be differentiated by the difference in temperature—in cerebro-spinal meningitis below normal or normal, in azoturia always elevated; the swelling of the quarters is absent in cerebro-spinal meningitis, and there is usually difficulty in deglutition in cerebro-spinal meningitis, and often alterations in the higher sensory functions. The urine in cerebro-spinal meningitis may be dark, but is usually of a redder tint than in azoturia; microscopically the diagnosis is potent. We find bloody urine in cerebro-spinal meningitis; urine dark, from the presence of free hæmoglobine or its derivatives, in azoturia,—in spinal meningitis a rare condition. I have only seen four cases in a practice of five years. The symptoms are not usually fulminant. If the animal is in harness there are short periods of great lameness amounting to mobility of progression, followed by the animal falling. There is a straddling squatty gait, the symptoms much aggravated by rectal examination (this also in azoturia), the horse often gets up and down, has chronic spasms of the muscles of the entire body. These are very characteristic, as are also the intervals of ease. There is straddling and paddling of the hind legs as in kidney troubles, no hardness of the quarter and usually little discoloration of the urine. The struggles when down are not all confined to efforts to rise, as in the early stages of azoturia,

but are made without reason, though not without rhyme, as they are usually rhythmical in character. Later on in azoturia we have, however, similar convulsive efforts.

From blind staggers it may be diagnosed by the difference in situation. Blind staggers, probably anthracoid in character, is only seen in animals pastured on low rich bottomed meadows in summer time; azoturia is usually a disease of winter and of the stabled animal.

Causation.—Azoturia is a disease of the functions of nutrition—a disease of nutritious excess. It is a disease of the well-to-do man's horse.

One of the conditions of health is that the excess of nutrition be removed by the lymphatics. It is conveyed again to the right side of the heart along the thoracic duct, and again poured into the current of the circulation to nourish the tissues. In azoturia there is so great nutritive excess that a large portion of nutritive matter is thrown back, undergoes retrograde decomposition into urea or the analogues of urea, and acts as a poisonous substance on the nerve centers. Centrally, it is probably a failure of the liver to perform its scavenger-like function of burning up the waste proteids. What I wish especially to call your attention to, however, is, that whatever its exciting cause, *azoturia is uræmia*. You have to deal with uræmic poisoning, and whether this is caused, as in this case, by the inaction of a surplus of nutrition on a healthy hard-working organism, or is due to inability of the kidneys to separate retrograde material from the blood, matters little as regards your treatment.

The question may be asked, why is azoturia more common in mares than horses. I think the question admits of ready answer. The female organism is, so to speak, more conservative than the male. Intended by nature to care for and support her parasitic offspring, she lays up with greater readiness than does the male a supply of nutritive matter in excess of her own requirement, and I think this part of my explanation is strengthened by the fact that mares in foal rarely have azoturia.

Secondly, the function of reflex irritation is higher in mares than in horses. Dr. Zuill, of Philadelphia, informs us that he

has found as high as 22 per cent. of urea in the urine of azoturia.

Post-mortem appearances.—Congestion of the meninges. The blood often chocolate colored or somewhat tarry but not abnormally fluid, as in the tarry blood of anthrax, or deficient in red disks, as in leucocythemia. The color is probably due to the admixture of the effete lymph. The liver is usually yellowish, enlarged, friable; kidneys enlarged and congested, sometimes containing pus in their pelves, and the mucous membrane of the bladder inflamed. The condition of the bladder is due to ammoniacal decomposition of the urine in a similar way to that found in old men with enlarged prostate, the constant action and reaction of the mucous thrown out by the irritated viscus on the urine and the irritation of the urine assuring the secretion of the mucous.

I call your attention to a sequel of azoturia, not mentioned, so far as I know, in English works. It is an almost complete atrophy of the crural triceps of the muscle of the fascia lata and in some cases of the glutei of one side. The first case I saw was in Philadelphia. I was called to "*put in the stifle*" of a horse. I found the patella in its place, but imagined that I had a dislocation of the femoro-tibial articulation. I was satisfied that I could place my hand on the tibial spine, and to show you that this great error of diagnosis was not due to my carelessness, two thoroughly qualified Philadelphia veterinarians agreed with me and also agreed that attempts at reduction would be futile, as, if by extension and counter-extension on the limb while the horse was recumbent the dislocation could be reduced, the condition would recur on rising. A big blister was placed on the affected side, and the horse was left to his fate. Imagine my surprise, when I saw the horse last summer as sound as a dollar, without a trace of the old trouble.

Since then I have been consulted in several similar cases; have advised as treatment repeated blisters and the battery, with a long run at grass. This has been successful in each case, but has required many months to bring about the result. The appearance is peculiar. There is apparently a big hole in the affected flank and the femur is almost denuded of musculature anteriorly.

Dr. Huidekoper suggested to me that rupture of the psoæ was

partly the cause. This may be so in some cases, though none of mine had sufficiently marked abduction of the limb to warrant the diagnosis. The cause may be a tissue change of pyrexia, local embolism interfering with nutrition, or altered nervous action due to pressure. One of my cases was complicated with a most distressing vesico-vaginal catarrh.

Treatment.—Starting from the standpoint that we are dealing with uræmia, the endeavor of the intelligent practitioner will be addressed to ridding the system as quickly as possible of the poisonous matter. I well remember, when a student, seeing these cases brought in, usually to be carried out again heels up. The routine treatment is to purge and bleed. The first part of the treatment I will pass over with the remark that if the patient would be accommodating enough to live until the purgative acted, it would be very good treatment indeed. Usually he dies before the purge acts. If he lives eighteen to twenty-four hours and goes on to recovery, there is the open question as to whether the purge or the *vis medicatrix naturæ* is to be thanked for it. Bleeding is, I think, to be recommended. It offers a means by which we are enabled to rapidly remove a large amount of urea from the body, and also tends to lessen the action of the remaining poison on the nerve centers. To bleed and purge, however, is to knock down with one hand and set up with the other, as nature, ever tenacious of her balance, will rapidly withdraw from the body fluids enough to make up the mass of blood, and thus hinder the action of a purge, depending as it does for its action in great degree on the maxim "*ubi irritato ibi affluxus.*" When I tell you that I rely almost exclusively on morphia, and my practice has been so successful that last winter about nine cases, most of them bad ones, made good recoveries, it may provoke a smile from those of you who are intensely practical. Let us see. What does morphia do for us? In the first place, it puts a stop to the action of urea on the nerve centers; it quiets the irritable patient; it allows him to stand quietly in a sling, and so avoid knocking the bark off himself in futile struggles. You may be still more incredulous when I tell you that my principal reason for the use of this remedy is to get its eliminator action, and you won't get this from the use

of ten or twenty grains. You are, of course, aware that the narcotic may be pushed much further in the lower animals than in man; their action is directed more to the cord and less to the higher faculties than in man, and to get good results from the morphia treatment of azoturia, you must push it far enough to get its toxic action—you must give ten or fifteen grains every hour until the patient rests quietly and sweats profusely. You may push it so far that it induces automatic convulsive movements of the limbs, simulating trotting or galloping, and you will do no harm by this course. To reassure you, I may state that the same treatment is frequently adopted in the uræmia of mankind with equally good results. I have given a drachm in twelve hours without producing sleep and with excellent results. Do not be afraid of it; use it freely and it will do you good service.

With regard to other treatment, I advise you to get the horse into slings as early as possible. If he entirely loses the control of his hind limbs, it will of course be necessary to lower him, and I may add that a smart stroke of the whip will often make him stand when hanging in them.

The local complication, the "kidney trouble," attracts usually most attention from the laity and the ignorant horse doctor.

Gentlemen, let me most strongly impress upon you the fact that it is not a kidney affection. The kidneys are doing their work—are working up to the very limit of their power. Do not aggravate them by the use of diuretics, especially of those resinous in character. If you must use them, and then when on the road to recovery, use squill and digitalis. If there is retention, shown by examination of the bladder, you may pass the catheter—and here again a word. Do not do it until your horse is comfortably in slings and has had a dose or two of morphia, as I have on several occasions seen the irritation caused by the passage of the catheter cause convulsions and the getting down of the animal. Of course, if you find your patient recumbent with a full bladder, it is well, especially in the horse, to put on the hind hobbles and take away the water, though personally, I prefer to pass the catheter standing.

A hint about catheters. You will find the thick foreign in-

strument with bluntish point much less liable to lose its way than the thin American one—fit only to pass in the stretched urethra of a bull.

Have you vaginitis or cystitis following, treat them on general principles. Rest the bladder by the use of purgatives, sheath it by the administration of mucilaginous drinks, soothe it by warm rectal injections, and you may, do you deem it necessary, supplement these means by washing out the bladder through the catheter. What food? No food for forty-eight hours, then food poor in nitrogen. Preventive measures: thorough ventilation, good drainage, good grooming, regular exercise, even if the hired man has to be sent out sleighing, and a diminished ration if the quietude is imperative.

You will find the question as to the use of nerve stimulants and blisters discussed in the scanty and disgraceful veterinary literature of this subject. Their use could only arise from a mistaken notion regarding the pathology of the condition, and I would take this opportunity of saying that if you would aid in the advance (now so great) of veterinary science in this country, you must go to comparative medical literature for aid. You are not competent to treat diseases of the lower animals unless you are able to appreciate human pathology. Confine yourselves to the scanty pabulum afforded you by veterinary literature, you will be routine practitioners at best, groping in the dark, not after science but dollars, and although the ability you may discover in finding these last may be a surprise to your neighbors and yourselves, you will never benefit your chosen profession one ha'worth; nay, you will aid to drag it down, to clip its wings and keep it where it has been so long, in the dog-eared volume of "Every Man His Own Horse Doctor," in the chest where the blacksmith keeps his spare nails and oakum, or the livery stable man his winter blankets.

If you can do no more, make a careful record of facts and publish them every once in a while, for those more favored by circumstances to draw inferences from. Report your unsuccessful cases, as well as those redounding to your credit, and so aid in suppressing the worm in the tongue, the wolf in the tail, and the salt mackerel for the loss of end of our generation.

SALICYLIC ACID.

By H. F. JAMES, V.S.

Was called on January 7th to see a brown horse ten years old, said to be very stiff and unfit for work in consequence; had been laid up for two weeks to see if rest would benefit, but grew worse every day. Owner had lately paid \$250 for him, and looked on him in his present state as almost valueless. Temperature, 101°; pulse, 75 and intermittent; gait so tied up that he could only step about six inches, and turned with great difficulty; no swelling of any of the articulations. Fæces slimy and hard; urine scanty, and poor appetite.

Diagnosis.—Sub-acute rheumatism. *Prognosis.*—Cautious.

Treatment.—Blanketed warmly; bandages to legs; nitrate of potash freely in drinking water; scalded oats and bean-mash, and a handful of clean timothy three times a day. From January 7th to the 12th, gave half-ounce doses of salicylic acid three times a day, giving a dose of purgative medicine on the 13th, which operated freely. I now reduced the salicylic acid to half-an-ounce daily until the 26th, when another good purge was given, and his recovery was complete. His appetite returned after three or four days of the treatment, and you could almost see him mend. Tried to obviate stomach derangement as far as possible by careful dieting and the combination of the acid with gentian in bolus.

COMPARATIVE STUDY OF SPORADIC PNEUMONIA AND CONTAGIOUS PLEURO-PNEUMONIA OF CATTLE.

By MESSRS. COULON AND OLIVIER.*

HISTORY.

The existence of sporadic pneumonia of cattle is a question that remains still unsettled, notwithstanding the numerous discussions it has given rise to.

The most different and contradictory opinions have been given.

*Translated from the Memoires de la Société Centrale de Medecine Veterinaire of Paris.

Some believe in its existence and have described its differential characters; others have denied it entirely or have mixed it with the contagious disease which, according to them, is but an accidental variation of it; then others again, without giving settled opinions, pretend that the cases of sporadic disease were not sufficiently evident to conclude as to its presence.

In France, Cruzel, Leblanc and Zundel are of the first opinion; in Germany, Kreutzer, Hildebrand, Spinola and Furstenberg not only accept it, but claim that it is quite common. The last named author has even indicated some characteristic and necropsical symptoms, which distinguish it from the contagious disease.

But other German authors and practitioners have doubted the value of the symptoms given by Furstenberg, and Lydtin especially has said that the lesions mentioned by him were those of pleuro-pneumonia contagiosa.

From recent discussions upon this subject, it is evident that the opinions differ yet essentially. While H. Bonley, Camille Leblanc, Trasbot and Cagny admit that the lungs of ruminants can be the seat of true contagious inflammation; others, Sanson, Nocard and Weber, consider the cases recorded as errors of diagnosis, and say that the pretended cases of sporadic disease were isolated pleuro-pneumonia, pulmonary congestion, vernicular bronchitis, pulmonary echynococi, etc., etc.

This variety of opinion can explain to a certain extent the differences which still exist in some minds in relation to the contagious or non-contagious nature of pleuro-pneumonia, and of the efficiency of preventive inoculation.

Those who do not admit of the sporadic disease, may, indeed, have in some cases where they have unknowingly met it, made inoculations, powerless to grant immunity; and it can be understood that in the presence of these negative results, and of the aptitude of the inoculated to take the contagious disease, their faith in inoculation may have been shaken.

It is also in the presence of some cases of sporadic pneumonia that some practitioners have concluded to the want of the contagious power of pleuro-pneumonia, from that of the propagation in the observed cases.

This state of incertitude becomes to-day still more to be regretted when the contagious character of the disease is recognized by law, and when pecuniary indemnity is paid to owners of animals that are destroyed for the interests of all.

The official veterinarian who in some cases, for reason, wishes to avoid the prescribing of excessive sanitary measures, must be satisfied with the possibility of meeting, in isolated cases, a non-contagious disease, independent of sanitary regulation.

It is important to elucidate this question and establish a positive difference, especially in relation to the lesions between the two forms of disease. This is the object of this paper.

Does sporadic pneumonia exist? Pleuro-pneumonia is a specific, parasitic affection, and from that, out of the ordinary nosological list, and therefore if the existence of the sporadic disease is denied, the lung will be the only organ of the economy which will have no pathological condition: an abnormal fact, which is increased by that other fact that its special function, its great vascularity, its close functional sympathies with the skin, expose it more than others to external influences. This exception would be so contrary to the laws of general pathology that reason refuses to accept it.

Acute, true pneumonia exists in ruminants; a careful observation of many years convinces us of it. That it is less frequent than in horses, we will not deny. Besides that the two species of animals are in different conditions of life, the respiratory apparatus of cattle is considerably less irritable. This irritation will be followed more by bronchitis than by pneumonia; and again, the pleura resists irritation so much that this condition is seldom met with except in pleuro-pneumonia.

But it is not less certain that accidental causes, that give rise to a congested condition of the lungs, do not remain entirely harmless.

These pathogenic causes of true pneumonia act principally in working animals in which the respiratory apparatus, physiologically excited during work, is the natural reservoir towards which the blood accumulates if the circulatory equilibrium is interfered with by a peripheral cooling effect.

Its frequency in working animals explains the opinion of Cruzel, who claims to have seen it frequently in the South.

The action of these causes is much less in animals kept in permanent stabulation, where absolute rest, uniform and constant temperature protect them from cold. It is no doubt for this reason that practitioners in the North of France have observed only the contagious affection.

But it is also common in animals kept in low and damp lands, when aqueous evaporation gives rise in all seasons to sudden changes of temperature.

We have often seen them, and by *cohabitation* and *inoculation* confirmed our diagnosis of the sporadic nature of the disease we were called to observe.

SYMPTOMS OF SPORADIC PNEUMONIA.

These are the symptoms we have observed. They vary in their form and intensity according to the period of the disease.

When, by exception, the animal is seen at the outset, a slight fever may be observed, characterized by an elevation of temperature between 38.5° and 39° , with a slight acceleration of respiration and circulation, viz., 20 to 25 respiratory motions and a pulse of 45 to 50. The conjunctiva, never red in cattle, is then of a yellowish tint, injected and turning to a more or less saffron red. Appetite still remains, rumination takes place after each meal; there is no tympanitis, no colic; the nose is yet cool, moist and all these symptoms exclude the possibility of digestive troubles.

Soon a short, aborted cough shows itself. It is easily stimulated by pressure of the trachea, and accompanied by a whitish aluminous but not abundant discharge from the nostrils.

Examination of the chest by percussion indicates a normal resonance, slightly weakened on the lower part, and generally only on one side. Auscultation reveals an exaggerated respiratory murmur, except below, where it is sensibly diminished, and even at times one of the respiratory sounds is absent, ordinarily at the time of expiration.

After a few days these symptoms increase. The cough is yet small, aborted, but more frequent. Respiration is increased to

35°. The temperature goes up to 39° and 39.5°. The pulse hard and bouncing, gives from 50 to 60 pulsations to the minute. Percussion shows evident dulness in the lower part of the chest, on one, or at times, both sides; and above this dulness, which occupies about the lower third or quarter of the lung, it is replaced by the resonance. Upon auscultation, the respiratory murmur has disappeared and replaced by a moist crepitant rale, very often mixed with mucous rale. In the upper part the respiratory murmur is strongly increased. Appetite has diminished, but has not entirely disappeared; still animals began to lose flesh.

The disease is well established and slowly progressing in its various stages. The respiration is more and more embarrassed, the pulse small, accelerated and weak, the temperature rises to 40°–45°. The dulness increased upwards, involving the half, the two-thirds, or perhaps the entire extent of the lobe. The dulness as well as the resonance, is not defined by a regularly horizontal, but on the contrary by an irregular line. Auscultation reveals on the dull portion a mixture of moist crepitant and sibilant rales, not always constant and easily displaced.

It is important to observe that the moist crepitant rale is heard in the entire extent of the dulness as long as this exists; it seems as if the engorged condition of the lung is never so complete as to prevent the access of air and prevent the vesicular murmur.

The apparition of the symptoms requires some five or six days, though at times the disease assumes a more acute character, and two or three days only are necessary for their manifestation. In this more active form the pain from difficult breathing becomes more marked. Intermittent at first and heard only when the animal lays down, it soon becomes continued, loud and strong. Tubular breathing has also become manifest from the second or third day, at the large bronchial division.

Sporadic pneumonia may terminate by resolution or asphyxia, the first being announced by the diminution of the febrile symptoms, improvement in the respiratory function, change in the cough, which becomes moist, abundant discharge from the nose, improved appetite, moist crepitant rale in auscultation, diminution

and disappearance of the dulness. This termination is the most frequent, and generally happens in six out of ten cases.

Asphyxia is almost the only fatal termination of the pneumonia of cattle; it kills from a third to a quarter of the patients. It is characterized by the dark red coloration of the mucous membrane, by a small, thready almost imperceptible pulse, contrasting much with the movements of the heart, which are strong and accelerated. Respiration is labored, 70 to the minute. The animal keeps standing up, with legs wide apart, head low and hanging down, the features are contracted, respiration becomes stertorons, much of the breathing is done by the mouth, the dulness of the lung extends to the whole surface of the lobe, and the animal soon dies.

Termination by gangrene and suppuration are also sometimes met. Passage to the chronic condition we have not observed.

DIFFERENTIAL SYMPTOMS.

The symptomatic study of both diseases shows that while they have characters common to both they also possess some peculiar to each.

These are few, and perhaps not very positive when they are considered separately, but they may by a close and attentive examination give positive data by which a positive diagnosis can be made.

The outset of both diseases is announced by a general fever, with its common symptoms, but a well marked difference exists in the mode of elevation of the temperature. It is conceded by all that in pleuro-pneumonia, while all conditions of health may yet remain, the thermometer will still register an elevation of 38°, 40°, or even 41°. In sporadic pneumonia, on the contrary, the rise is progressive, reaching its highest degree only after several days. It is however in this first stage that this can be of any advantage in the differential diagnosis.

In pleuro-pneumonia, in the beginning, digestive troubles are almost always observed. Frequent indigestion, tympanitis, general uneasiness of the patient, intermittent slight colicky pains, constipation followed by diarrhoea. These symptoms ordinarily coincide with the beginning of the pleuritic effusions.

All these are missing in the sporadic form, animals preserving even to an advanced period a certain amount of appetite.

A third differential diagnostic character is the complaint or grunting which shows itself from the beginning in pleuro-pneumonia, and of which it is for many the pathognomical symptom. It is, on the contrary, exceptional in sporadic pneumonia, and when heard there, it is only by intermittence and when the disease assumes a rapid and severe form.

The tubular breathing is also a good symptom ; seldom heard in the sporadic affection, it is, on the contrary, frequent in pleuro-pneumonia. In that disease, when the pleura becomes well diseased, the chest shows evidence of an exaggerated sensibility ; in the true pneumonia, where the pleura remains intact, percussion is apparently painless.

And again, the œdematous infiltration of the dewlap is a very important differential symptom, as it never exists in the sporadic disease.

To resume : Sporadic pneumonia differs from the contagious affection by—

1st. A gradual increase of the temperature, reaching its highest degree only in the *second stage*.

2d. By the absence of all digestive trouble in the course of the disease, and principally at the first stage.

3d. By the manifest insensibility of the chest.

4th. By the ordinary absence of the grunt and of the tubular breathing, which is never missing in pleuro-pneumonia.

5th and last. By constant absence of the swelling of the dewlap, which generally exists in pleuro-pneumonia.

LESIONS OF SPORADIC PNEUMONIA.

On the opening of the chest there is no effusion in the pleural cavity. There are no adhesions between the pleura, except when little superficial abscesses of the lung have pushed out and irritated the visceral and produced its adhesion to the costal layer. With this exception, the serous remains transparent, smooth and soft, as in the normal state.

The lung fills up the chest exactly ; does not collapse to the

contact of the air, but preserves the same size when removed from its cavity. It is very heavy, and keeps the impression of the finger, except at the topmost part, where it has yet a certain elasticity.

The plenra, when sound, shows through its transparency the coloration of the pulmonary tissue, rutilant red, then strong purple in the superior part of the lung, growing gradually to a red brick color in the middle, to become of a dirty red towards the lower part of the organ.

Upon this coloration is seen a network of various tints, dividing the surface of the lobe in a great number of irregular polyedrical surfaces. This network, formed by the interlobular sections under the plenra, is not seen in the healthy tissue. Of a blackish purple in the superior congested portion, it becomes of a yellowish white in the lower parts of the lungs.

Upon a transversal section of a lobe are found, ordinarily, lesions which indicate that the inflammatory process has started from the lower portion of the organ to spread by degrees towards the superior, in such a way that the density, the coloration, the texture of the parenchym of the organ varies from one region to the other, according to the length of standing of the inflammation.

The parenchym of the upper portion, only hyperhemic, has the same cellular texture and elasticity; it is difficult to cut, floats in water, and towards the superior border is evidently emphysematous.

In the middle of the lung the color is of a darker red, the tissue heavier, easier to tear, less elastic, and exhibits the first degree of hepatization. And then in the lower region the coloration has passed from the brick red to a dirty tint, comparable to that of boiled meat. There the tissue is very heavy, very easily tore, entirely hepatized, its cut is even, and when torn it is evidently granular.

• On that section is seen again the subpleural interlobular arborization, dividing the parenchym in as many irregular polyedrical surfaces as there are of lobes. These divisions, emphysematous towards the superior border of the lobe, are not very

distinct from the parenchymatous structure at that point; they become more apparent in the congested portion, where their dark color, due to capillary hemorrhages, differ from the purplish color of pulmonary tissue. There, also, on section, serosity is seen escaping from their meshes.

In the hepatized lower part, the coloring matter of the blood having been resorbed, the divisions appear under the form of whitish regular lines of an even thickness. Of the same density as the pulmonary tissue, they seem part of it, and are distinguishable from it only by their white greyish color, so different from the light red of the lobules. Their division is not followed by running of serosity.

The pulmonary lobules in the upper parts, recently diseased, have a general strong red or purplish hue, evenly spread from one lobule to the other. Closely examined, the hue is at times finely marked with pigmentary spots, blackish, due to capillary hemorrhages.

But here and there, upon the homogeneous color, appears a polyedrical brownish-black spot, resembling the section of a fresh clot of blood. It is a lobule where the congestion has been such that the hemorrhage has destroyed almost entirely the cellular network, which seems to disappear in the bloody clot. This special lesion, very likely, is due to the sectioned structure of the lungs, which renders the lobules independent of each other, especially in case of sanguinous irritation, and prevents the diffusion of the lesion.

In the superior and middle regions are also found, disseminated in the mass of the lobe or on its surface, a certain number of purulent centres of various sizes, containing a thick, creamy, whitish-yellow liquid, analogons to that of warm abscesses, and having for wall a layer of little granulations, purplish in color, like that of the surrounding tissue. These abscesses are not found in the lower region. They have been emptied by resorption or by evacuation of their contents in the bronchial divisions.

In the lower part the lobules are seen, evenly hepatized, smooth on section, with a granulous tear, due to the presence in their infundibula of very fine fibrinous concretions. On that

section are observed, principally towards the lower border, a great number of yellowish points close together; these are very small purulent centres, enclosed in the hepatized tissue. By pressure, these centres empty themselves of their contents, which proves to be a few drops of yellow, thick, creamy pus. Low down the lobe, these collect together by hypophysis, become more apparent, and form very irregular but larger purulent masses; their substance, partly concreted, allow them to keep the form of their cavities, from which rise the numerous prolongations that they present, and render them comparable to the moulding of the pulmonary acini.

In this region there is another lesion; it is the ultimate transformation of the lobules, already mentioned, in the middle and upper regions as disorganized by hemorrhage; too extensively diseased to return to a healthy condition of life, they are slowly disjointed from the surrounding divisions and form a sequestrum, moving in its alveola, whose tissue, more friable and discolored than that of the hepatized lobes, is in way of softening. Even at times, the blood having entirely dried and being resorbed, there remains but the primitive tissue desagregated by the hemorrhage, under the form of more or less solid masses.

Divided, the bronchia present alterations varying according to the region; in the middle and upper one they are filled with whitish very foaming serosity, the mucous membrane, highly injected, has a color varying from saffron yellow to mahogany.

In the lower part the serosity which they contain is less foaming, has become purulent, half concreted, and the mucous membrane seems to be destroyed.

The bronchial lymphatic glands are hypertrophied, and on section shows extensive injection. Their color is brownish grey.

DIFFERENTIAL LESIONS.

It being granted that pleuro-pneumonia is a specific affection, transmissible, of an exudative nature, becoming inflammatory only secondarily, with an incubative stage and with a very irregular mode of progress:

Again, being admitted that the sporadic disease is a true, irri-

tating, non-transmissible inflammation, whose progress and duration are quite uniform, the thought must suggest itself that two diseases of such different nature must have very different anatomical characters.

The comparative examination of these lesions confirms this induction.

In opening the pleuro-pneumonic cadaver, the sternal region and at times the neck, are the seat of swelling. This is sometimes quite large, and the subcutaneous cellular tissue through which it exists is indurated, intimately united to the skin and penetrating by its deep surface into the intermuscular structures, in such a way that a section of them resembles much the marbled aspect of the lung.

In the sporadic disease, no infiltration of the dewlap, or of the neck. The skin, subcutaneous connective and the intermuscular tissue are normal.

In the contagious disease the pleural sac is the seat of strong inflammation, characterized by a great exudation, reddish or yellow, floconous; by thick false membranes, often united together; and again, by the removal of the pleural epithelium, which is then replaced by a rough, irregular, dark red surface covering and concealing the aspect of the lung.

In the sporadic disease, there is no trace of liquid in the pleura, which remains healthy, soft, transparent. If at times subpleural pulmonary abscesses exist, the adherence of the two layers is dry and limited to the extent of the abscess.

In the pleuro-pneumonic lung, a transverse section indicates a lobular pneumonia; the lesions are disseminated in the whole organ, which presents a number of little centres which, still healthy, are side by side with others strongly congested or even completely indurated and discolored.

The interlobular divisions, the primitive seat of the disease, are considerably hypertrophied, but irregularly so, and of various manner; while here they are very thick, there their thickness is quite small. There are some gorged with citrine yellow liquid, with fibrinous concretions in their network, while others are much indurated and of fibrous texture.

This hypertrophy of the divisions make them appear as if they predominated over the pulmonary texture, and on section they form a greyish white surface, over which the lobules show the multicolor aspect.

An incision through the sporadic lung shows, on the contrary, that the disease extends to the entire lobe; the lesions are quite regularly superposed from below upwards, and the various shades of the general coloration are sensibly mingling together; the brown or purplish color of the middle region becomes of a strong and then a pale red, as it goes towards the superior part of the lobe; it becomes of dark brick red coloration as it goes down, and towards the inferior border resembles boiled meat.

The interlobular septa, which we have seen infiltrated in strong yellow, and surrounding the congested centres of pleuro-pneumonia, are, on the contrary, here, in the congested region, infiltrated with a blackish bloody serum; their thickness is small. The infiltration being consecutive to the congestion of the lobules, these prevent their enlargement. In the inferior region, which is hepatized, and where they are compressed by the densified parenchyma, they resemble little regular whitish lines of small thickness.

In pleuro-pneumonia, the disease process being most exclusively confined to the connective tissue, gives rise to an excessive proliferation of its elements, hence a condensing irritation, an induration gradually and continually increasing.

The examination of the lobules made separately, shows, indeed, that their lesions are all due to the compression and crushing to which they are subjected by the septa, and from which rise so many lobular pneumonia. But as the pulmonary structure is not primarily affected, there is no true hepatization, and as the congestion succeeds immediately an induration, complete and definitive, red first, and then whitish.

In ordinary pneumonia, the initial lesion starts, on the contrary, in the mucous membrane, its irritation starts the inflammatory congestion, then the general hepatization of the lobe, traduced by a condition of friability more or less marked, and finally by its purulent transformation—conditions which do not take place in pleuro-pneumonia.

The intensity of this process ordinarily gives rise to the formation of abscesses, quite numerous, circumscribed to the inflamed portion; various in size, containing thick, creamy, yellowish pus, without special envelop, but surrounded by little purplish granulations.

This tendency to purulent transformation, characteristic of true inflammation, is again found in the lower hepatized part. In that region the easily torn lobular tissue exposes a mass of fibrinous concretions, soon transforming themselves into purulent centres, which are observed as little yellowish drops at the surface of the cut structure. Towards the lower border, these centres gather together and form little purulent masses, partly concreted, and of very irregular shapes.

Finally, the only lesions common to both affections are the modifications of the lobules or centres.

In pleuro-pneumonia, the sudden and complete enclosing of some tubular portions by the infiltrated septa may change them into sequestra, and their substance broken down by the peripheral compression and the capillary hemorrhages, slowly becomes soft and appears as a grumulous, greyish liquid, surrounded by a fibrous envelope.

In ordinary pneumonia the cause of this mortification does not come from outwards, but from the inside of the lobule; it is due to the fact that the lobules, made autonomous by their enclosing, are congested in a proportion that varies and is proportionate to the importance of their special vascular system. Those in which the congestion has been hemorrhagic to such an extent as to break the parenchyma, must mortify rapidly; indeed, they are found in the hepatized region, to the state of sequestra separated from their walls by a disjointing fissure, in which the substance remains for some time dry, as momified, then becomes soft and puttaceous in consistency.

We believe that in the presence of those, the only common lesions of the two diseases, when they are found with the others so different, no confusion can be made in their diagnosis.

To resume: Sporadic pneumonia is clearly distinguished from pleuro-pneumonia by a total sum of constant lesions, unequivocal, and amongst which are:

1st. The absence of infiltration to the dewlap and the neck ; infiltration which is constant and abundant in plenro-pneumonia.

2d. The absence of plenral exndation and of false membranes ; lesions always present in the contagious disease.

3d. The generalization of the lesions in the lobules, in which the uniform general tint is so different from the irregularly spread lesions and the much colored aspect of the section of the pleuro-pneumonic lung.

4th. The condition of the interlobular sections whose limited infiltration is not yellowish, but purplish, in the recently inflamed parts, and in which their narrow thickness is always limited ; while in pleuro-pneumonia the yellow and very abundant infiltration renders them irregular, bosselated and very thick.

5th. The hepatization of the parenchyma, which becomes more and more tearable, and its gradual transformation, characterized by acute abscesses, and an abundant purulent pigmentation ; all of which contrasts so much with the gradual induration, increase of tenacity of the pleuro-pneumonic structure, without any tendency to suppuration.

EDITORIAL.

RINDERPEST IN POUGHKEEPSIE.

“An outbreak of rinderpest in Poughkeepsie having been reported to the State Board of Health, the Assembly has granted an appropriation of \$5,000 to be used in suppressing the disease.”—*N. Y. Med. Jour.*, Jan. 14.

It is to be regretted that such a statement should have found endorsement by so important a paper as the *New York Medical Journal* ; for, thanks to God, there is not a word of truth in it. Rinderpest is not yet amongst the list of contagious diseases of our domestic animals, and it is to be hoped that our health authorities will see that it never obtains a foothold in this country. We have already enough with what we have, and our live stock is already sufficiently threatened with other diseases, without having added to them the prospect of being decimated by rinderpest.

The diseases to which reference is made are probably either pleuro-pneumonia or tuberculosis—affections which the sanitary reports indicate as prevailing more or less in various parts of New York and other States.

This error, therefore, can be to a great extent ignored, and veterinarians who have read must have smiled at the news thus brought to them.

But what is not to be ridiculed, is the serious part of the statement, viz.: "The Assembly has granted an appropriation of \$5,000 to be used in suppressing the disease." If this is correct, we never heard of it, and certainly it is a shameful thing that an appropriation to that amount should have been made—for what? to suppress the disease. Would \$5,000 be sufficient to stop the progress of a disease of the nature of rinderpest, which has cost millions to England? And as it is not rinderpest, of what use will that amount of money be to suppress pleuro-pneumonia or tuberculosis, if such are the diseases referred to, when all sound sanitary measures indicated against those affections are brilliant by their absence?

It is another of those jobs which so commonly find their origin in Albany, for which funds are provided without necessity, and which find their way into the pockets of all but those who are directly interested.

It is not probable that veterinary authorities have been consulted about the true nature of the disease; it is less probable that they will be employed to do the work for which the appropriation was made, or, if they are, we are satisfied that our contemporary will soon have to correct the statement, and with us ask that the \$5,000 be given for some better purpose.

UNITED STATES VETERINARY MEDICAL ASSOCIATION AND MASSACHUSETTS VETERINARY ASSOCIATION.

As will be seen by a notice of Dr. Michener, secretary of the U. S. V. M. Ass., the regular semi-annual meeting of that body will take place as usual on the third Tuesday of March, at 4 P. M., when the regular routine of business, papers, discussions and dinner will take place.

Of what importance this meeting will be we are unable to say, as, with the exception of the notice that we believe the secretary has taken the liberty to issue on his own responsibility, we are not aware that the officers of the association have given a thought to the meeting, and perhaps to the association, since the last reunion at Cincinnati.

If the meeting of the U. S. V. M. Ass., however, fails to be provided with enough interesting material to justify a trip to Boston, there is ample provision made for a well-rewarded excursion, which is offered to the Eastern members who might make up their minds for the journey, in the invitation which we publish to-day from the Massachusetts Veterinary Association. We hope that this opportunity will not be missed to attend that meeting, which takes place on the evening preceding that of the U. S. V. M. Ass., and that will give us an opportunity to assist in the work done by this young but active association.

SPORADIC PNEUMONIA AND CONTAGIOUS PLEURO-PNEUMONIA.

The correct diagnosis of these two diseases is a question that has no doubt puzzled many veterinarians, and which has in many instances given rise to serious thoughts as to the propriety of applying severe sanitary measures or to leave an animal or a herd free from them.

Even to-day veterinary opinions are divided on the subject, and to try to assist in deciding the question, Messrs. Coulon and Olivier have prepared a long paper on this subject, which was presented to the Societe Centrale de Medecine Veterinaire of Paris, and ordered to be printed in the minutes.

This has appeared to us of sufficient interest and importance to justify its publication in our pages. We have left out of it only the symptomology and the lesions of pleuro-pneumonia proper, as those have been published over and over again, and have satisfied ourselves in translating sporadic pneumonia, with its history as it is given in the original paper, with the conclusions by which, according to the authors, a correct differential diagnosis can be made. We hope that the reproduction will be

carefully noted by our readers, and that those who may have opportunities of testing them in their cattle practice will report to us the results they may obtain in the application of the rules laid down by those veterinarians.

SANITARY STATEMENTS.

Our usual call for these has as yet found but little attention on the part of our confreres, or of our sanitary veterinarians.

As it is important that they should be published, we would once again ask of our readers to forward us a statement, as correct as possible, of the number of cases of contagious diseases that they may have had to treat in the last semester of 1884.

SANITARY CONDITION OF DOMESTIC ANIMALS IN BELGIUM.

BY J. W. WEHENKEL.

(From the *Bulletin du Comité Consultatif de Police Sanitaire Veterinaire*.)

During the second trimester of the year 1884, the following contagious diseases have been observed:

1st. **RABIES OR HYDROPHOBIA.**—During the first three months of 1884 that disease was observed only upon three dogs, which had been brought to the clinic of the Brussels schools. During the following months twenty-three cases were observed in the various circumscriptions. Amongst those twenty-one were observed amongst dogs, and two in cattle.

In one of the circumscriptions, several persons and one donkey had been bitten by one of the rabid dogs. Sixty-three which had been bitten were destroyed as suspected of contamination.

2d. **ANTHRAX.**—In this second trimester, forty-nine animals were affected with some of the forms of anthrax, against fifty-eight in the first.

3d. **HOG CHOLERA.**—Over one hundred and fifty-one cases of this disease were reported in five of the Provinces. On account of its prevailing extensively in some districts, the Academy of Medicine of Belgium has reached the following conclusions:

1st. Animals used for consumption ought to be examined before killing.

2d. They should be examined after death, also, and before being skinned.

3d. These inspections ought to be made by a veterinarian.

4th. In doubtful cases the opinion of a veterinarian is essential.

5th. Animals affected with inflammatory diseases, in the first stage, may be given to the public, so long as they have been bled to death.

6th. Animals affected with cachexia, contagious pleuro-pneumonia, tuberculosis, small-pox, measles, trichinosis, rabies, glanders or farcy, typhoid affections, carbuucular diseases, hog cholera, septicæmia, as well as those which have been poisoned, must not be allowed for public use.

7th. Animals that have died from disease must also be excluded.

8th. Animals that die by hemorrhage, without organic lesions, by apoplexy or by accidents, cannot be used for consumption unless an inspection has been made and a certificate given by a veterinarian to that effect.

GLANDERS OR FARCY.—Sixty-two cases are recorded in the second against sixty-eight in the first trimester of the year.

FOOT AND MOUTH DISEASE.—The second trimester shows a great improvement, fourteen cases only being recorded.

CONTAGIOUS PLEURO-PNEUMONIA.—This affection seems to be well under control, the number of animals affected having declined from 318 in the last three months of 1883, to 200 in the first three of 1884, and to 184 in the second trimester.

FOOT ROT in sheep has been quite extensive, nearly 500 cases being recorded.

MANGE IN SHEEP has also been observed in a small number of animals of that specie.

OUR VETERINARY REGISTER.

LIST OF MEMBERS OF THE NEW YORK COUNTY VETERINARY MEDICAL SOCIETY.

R. W. Finlay, V.S.....	New York College Veterinary Surgeons
R. A. Finlay, V.S.....	“ “ “ “ “
P. Peters, V.S.....	“ “ “ “ “

E. H. Heard, M.R.C.V.S.....	Edinburgh
L. V. Plageman, M.R.C.V.S.....	England
W. T. Carmody, M.R.C.V.S.....	"
Jas. A. Hamil, D.V.S.....	Columbia College
A. E. Buzard, M.R.C.V.S.....	England
Ralph Ogle, V.S.....	County Veterinary Medical Society, Feb. 26, 1879
Thomas Ogle, V.S.....	" " " " " "
Jas. Cattanach, V.S.....	" " " " " "
G. P. Delisser, V.S.....	" " " " " "
E. L. Travares, V.S.....	" " " " " "
Ebenezer Waters, V.S.....	" " " " " "
Washington Waters, V.S.....	" " " " " "
Jas. Stokes, V.S.....	" " " " " "
Wm. Holloway, V.S.....	" " " " " "
G. G. Palmer, V.S.....	" " " " March, 1880
M. Faust, V.S.....	" " " " Sept, 1881
J. H. Jacobus, V.S.....	" " " " " 1882
W. D. Middletown, V.S.....	" " " " " 1883
Solomon Cohen, V.S.....	" " " " July, 1883

VETERINARY LEGISLATION.

AN ACT TO INCORPORATE A SOCIETY FOR THE PROMOTION OF VETERINARY SCIENCE AND ART IN THE STATE OF NEW JERSEY.

SEC. 1. *Be it enacted*, That any number of persons, not less than ten, who have been and are now connected with the "Veterinary Medical Association of New Jersey," desirous of promoting the interests of veterinary science and practice in this State, may associate themselves together for that purpose, adopt a corporate name and make a certificate in writing of their organization, with the names and residences of the persons making the certificate, and upon so doing shall be and are the "New Jersey State Veterinary Society."

SEC. 2. *Be it enacted*, That said society shall for its first year have the same officers as are now the officers of the "Veterinary Medical Association of New Jersey," shall adopt such Constitution and By-Laws and such rules and regulations as to its officers, its modes of business, and its conditions of membership as a majority of all members of said society shall approve of.

SEC. 3. *Be it enacted*, That no person not at present a member of the "Veterinary Medical Association of New Jersey," shall become a member of the "New Jersey State Veterinary Society," unless he shall have received a veterinary or medical diploma or certificate from some incorporated medical or veterinary college or school, or have been examined by a Board of Examiners appointed by this Society, and declared competent for veterinary practice in this State; and said Society shall have full authority to judge of their admission, or of their continuance as members.

SEC. 4. *Be it enacted*, That the Society hereby incorporated shall have power to use a seal of its incorporation, and to own property to an amount not exceeding one thousand dollars, and in the name of its President and Secretary to sue and be sued.

REVIEWS AND NOTICES.

THE ANATOMY OF THE HORSE.—A DISSECTION GUIDE, by J. McFADYEAU, M.B., C.M., B.Sc., &c. (W. R. Jenkins, N. Y.)

In the November number of last year we called the attention of our readers to some advanced sheets that had been shown to us by the publisher of this excellent book.

When one considers the numerous works on anatomy which we already possess in the English language, it would seem at first that another book on that subject would be superfluous, especially after the publication of the superior translation of Chanveau by Fleming, which now has become the classical work by reason of excellence. But how different is the new work of Mr. McFadyeau from all others! It is coming to complete the work above mentioned, and fill up a want which is much felt in the study of equine anatomy. It is truly a dissection guide, and in the eleven chapters which forms the volume of nearly four hundred pages, the old practitioner, the anatomist, as well as the veterinary student, will find much material for interest and study. The book recommends itself by a series of colored plates, representing natural and carefully made dissections, the correctness of which every

one familiar with the subject will appreciate. Other illustrations from Chanveau and Lyh increase the value of the work.

Anatomy of the Horse can be considered as the only book of its kind in the English language, one that no student can be without, and for which the English speaking veterinary profession can justly be thankful to the author.

MANUAL OF EQUINE MEDICINE, by J. B. GRESSWELL, M.R.C.V.S., ETC., and A. GRESSWELL, M.R.C.V.S., ENGLAND, ETC. (W. R. Jenkins, N. Y., Bailliere, Tindall & Co., London.)

This is the title of a nice little book of about 400 pages, divided into twelve chapters, in which the authors have attempted the difficult task of concisely and clearly presenting to the reader the principal facts of equine pathology.

At first it seems that the undertaking is impossible. Messrs. Gresswell have succeeded well, and while many of the diseases are altogether treated too superficially and too *concisely*, the reading of several chapters will well pay those who will carefully study them.

Chapter 3, on vegetable parasites and the germ theory, etc., Chapter 11, which offer to the reader the subject of eutozoa, and Chapter 12, which treats of toxicology, are as complete as a little work of that size can be expected to be.

Manual of Equine Medicine will no doubt prove in the hands of many a valuable addition to a veterinary library.

CONTROLLING SEX IN GENERATION, by S. H. TERRY. (Fowler & Wells Co., N. Y.)

In this little book the author refers to a series of observations and investigations that he has made on the influence that physical law seems to have in controlling sex in the embryo of man and brute. We can recommend its reading, though we as veterinarians, would have been glad to see more on this subject relating to our domestic animals. The four and a half pages that speak of the application of the physical law in our domestic animals, are altogether insufficient to cover the subject, and to present the numerous evidences the author might have gathered for the good of the theory he is trying to introduce.

REPORT OF THE VETERINARY DEPARTMENT OF THE STATE
AGRICULTURAL COLLEGE, FORT COLLINS, COLO., by GEORGE C. FA-
VILLE, B.S., D.V.M.

A neatly gotten up pamphlet of twenty-two pages, where the author treats of the few diseases that he has had opportunity to observe in Colorado during a summer vacation. Ergotism, splenic fever, loco, mange, occupy the principal part of the report, which is concluded by some very wise remarks on the subject of needed legislation.

The THERAPEUTIC GAZETTE is a new monthly journal, the first number of which appeared on the 15th of January, edited by Professors Horatio C. Wood, M.D., and Robert Meade Smith, of the University of Pennsylvania. This new journal will prove, in the hands of the veterinarian as well as in those of the physician, a good acquisition to therapeutic literature. Subscriptions can be had at 1925 Chestnut Street, Philadelphia. Subscription, \$2.00 a year.

VETERINARY COLLEGES.

ONTARIO VETERINARY COLLEGE.

The students of the Ontario Veterinary College held their eighth annual dinner at the Walker House, Toronto, on Friday evening, January 30th, 1885.

Dr. E. McLean, Pilot Mound, Manitoba, occupied the chair. Among the guests were Prof. A. Smith, V.S., Principal of the College; Dr. Duncan, Dr. Barrett, Dr. Thorburn and F. W. Babington (of the Faculty); Dr. Bryce, Dr. May, Dr. McDonell, Dr. Cowan (Galt.), Dr. Quinn, Rev. C. Campbell, Mr. H. Wade, Secretary of Agricultural Society; Mayor Boswell, Hon. J. Holderness, J. H. Mead, E. P. Roden, J. Keith, and others.

When thorough justice had been done the good things on the table, several speeches were made and a number of toasts proposed. The toasts to the Queen and the President of the United States were received with great enthusiasm. The latter toast was proposed by Mr. J. Q. Taylor (Vice-President) in an appropriate

manner. Then followed the toasts to the Governor General and the Lieutenant Governor, which were received with hearty applause. The toast for the Army and Navy was responded to by Mr. Mead. Mr. Story proposed the Ontario Veterinary College, Dr. Smith replying in an able and suitable manner. Recitations were given, and songs sung by several of the students, after which the gathering separated, all being thoroughly pleased with the evening's proceedings.

SOCIETY MEETINGS.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular monthly meeting of the Massachusetts Veterinary Association was held January 7th, and was called to order at 8:15 by the president. Twelve members answered the roll-call, when the minutes of the last meeting were read. Dr. Harrison moved, and it was seconded, that the minutes of the M. V. A. be not reported until after they were accepted. Carried. The minutes of last meeting were then accepted.

Dr. Howard thought the standing of the Columbia Veterinary College was not involved until the truth of the evidence showing that it had made a proposal for a certain sum of money and a short period of attendance to grant a diploma, had been established.

Under the head of new business, it was decided to report on anything new that may come up, such as new methods, new agents, etc.

Dr. Bryden presented the society with a local anesthesæ for mucous membranes, in the form of hydro-chlorate localre, 4 per cent. solution, which would produce its effect on the eye in five minutes, and last for fifteen or twenty.

Dr. Osgood moved, and it was seconded, that a committee of original research be formed, and this committee be balloted for. Carried. Drs. Osgood, Howard and Harrison were elected.

Dr. Osgood reported a very interesting case of post-pharyngeal abscess in the horse, which has existed for six weeks, and he wanted to know would it be safe and advisable to open it from the outside or inside.

Dr. Byrne reported a great many cases he had opened from the outside, and Dr. Harrison had opened one from the mouth, but it was decided that local treatment and allowing nature to make the opening, was the most desirable.

Dr. Bunker, as essayist of the evening, reported a few very interesting cases. Dr. Blackwood next essayist.

It was moved that the special investigating committee be instructed to examine into the standing of the different veterinary colleges in existence. Carried. Adjourned.

The next meeting of the Massachusetts Veterinary Association will be held

at the rooms of the Medical Library Association, 19 Boylston Place, Boston, Mass., on Monday evening, March 16th, at 8 o'clock.

All members of the United States Veterinary Medical Association are cordially invited to attend.

J. F. WINCHESTER, D.V.S., Sec'y.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of this association was held on January 8th, at 1526 Race street, Philadelphia.

Members present—Drs. Rodgers, Miller, Glass, Hoskins, Zuill, Weber and Gaentner.

The minutes of the previous meeting were read and approved.

The committee on publication reported that Dr. Rodgers was willing to make corrections and addition to his paper on "Milk," and hand it over to the association to be disposed of as it might direct.

Dr. Zuill thought that it should be published in book form. Dr. Hoskins suggested the idea of putting it in the hands of a publisher for sale, and argued on the value of the work. The committee were instructed to get estimates and report.

Dr. J. Reinkeeler was proposed for membership.

Dr. Zuill read a paper on "Practical and Chemical Analysis." He took up some of the most potent poisons used in medicine—arsenic, antimony, strychnia and bi-chloride of mercury.

Dr. Glass, as per appointment, gave the history of symptoms and treatment of enzootic typhoid bronchitis. As it had occurred in his practice, the course of the disease ran through about 24 days.

Dr. Rodgers suggested that this association take steps toward conferring with the veterinarians of this country and of Canada on the subject of calling a convention for the purpose of forming a U. S. Veterinary Pharmacopia.

The president appointed the time that would be taken up by citing cases, as the time to discuss the subject at the next meeting.

Dr. Weber was appointed to read a paper at the next meeting.

The regular monthly meeting of the Keystone Veterinary Medical Association was held on February 5th, at 1526 Race street. President Hoskins called the meeting to order at 8:15.

The secretary read the roll. Responses—Hoskins, Glass, Weber, Zuill, Rodgers, Huidekoper, and Gaentner.

The minutes were read, and with slight corrections approved.

The committee on publication reported that after examining Dr. Rodgers' paper they would suggest that he re-write it, as it was hardly in condition to go to the compositor. Dr. Rodgers agreed to do so. On motion, the committee were instructed to present Dr. Rodgers with a box of cigars for the trouble of re-writing. Committee was continued.

The committee on credentials reported favorably on Dr. J. Reinkeeler. Committee discharged.

The treasurer reported \$30.27 in the treasury.

The secretary read communications from Thos. Wilhild and Dr. Schoufler. Dr. J. Reinkeeler was elected to membership.

Dr. Weber read a paper on "Cerebro-Spinal Meningitis." Among the supposed causes were atmospheric conditions, fatigue, and great exertion, when attended with filth and bad ventilation. A case was cited where foul clothing seemed to be a source of contagion. It had been traced along covered water courses and through malarial districts. Climate does not affect the disease; a morbid poison, like ergot, or the emanations from stagnant water.

Dr. Rodgers exhibited an ovarian cyst, the result of an experiment made by him on a sow, where he removed the connection between the ovary and ovarian tube. The doctor was more than ever convinced that wandering ova were a cause of ovarian cyst.

Dr. Rodgers also exhibited the remains of an amputated uterus that had proved successful, and the animal fattened and slaughtered.

Dr. Zuill exhibited a cestic caeculi, taken from a bitch, that nearly filled the pelvic cavity. "Removed by C. M."

The subject of calling a convention to form a U. S. Veterinary Pharmacopia was discussed. It was agreed to have a committee appointed to correspond with all the veterinary centers and learn the views of the profession.

Drs. Huidekoper, Rodgers and Glass were appointed on that committee.

After an hour's discussion on the subject, it was apparent that a standard text-book on veterinary pharmacy was greatly needed by the profession and trade.

CHAS. T. GOENTNER.

VETERINARY MEDICAL ASSOCIATION OF NEW JERSEY.

The third regular meeting of this association was held at the American House, Trenton, N. J., on Dec. 10th, 1884.

President Dr. Miller called the meeting to order at 3:15 P. M., and requested the secretary to call the roll.

The following gentlemen were present, viz.: Drs. C. K. Dyer, of Mount Holly; Wm. B. E. Miller, of Camden; — Dixon, of Hoboken; H. W. Rowland, of Jersey City; James C. Dnstan, of Morristown; L. R. Sattler, of Newark; J. Gerth, Jr., of Newark; T. B. Rogers, of Westville; Wm. G. Schmidt, of Newark; and W. P. Humphreys, of Elizabeth.

A majority of the Board of Censors being absent, Dr. Gerth moved that the rules be suspended and Drs. Hawk, Carmody, Mook and Cosgrove be admitted as members. This was unanimously concurred in.

The secretary and treasurer had no report to make.

The committee to draft new laws in relation to contagious animal diseases reported that the State Board of Health was taking steps to have new laws enacted that will be more thorough and effective than those now in force.

Dr. Dyer moved that the report be received and the committee discharged. Seconded and carried.

Drs. W. H. Lowe, of Paterson, Wm. B. Smith, of Trenton, and R. Leis, of Newark, were proposed for membership. Upon motion, the rules were suspended and the gentlemen admitted.

The name of Dr. Lauch, of Newark, was referred to the Board of Censors.

Drs. Glass and Gaentner, both of Philadelphia, Pa., were present as visitors, and were introduced by the president, Dr. Miller.

Dr. Miller requested Dr. Glass to address the association. Dr. Glass cheerfully complied. In addressing the association he drew special attention to the use and action of eserine in colic.

The chairman of committee to consider the resolution offered by Dr. J. C. Corlies at the first regular meeting, reported in favor of some sections of the resolution, and unfavorably of most sections.

After an animated discussion, Dr. Dixon moved that the report be received, and that all consideration in relation to the resolution as offered by Dr. Corlies be dismissed. Carried unanimously.

The essayist, Dr. Rogers, read a very able article on "Azoturia," and highly recommended the use of large doses of morphine in treatment.

Upon recommendation of Drs. Rogers, Dixon and Rowland, Prof. A. Liautard, Dean of the American Veterinary College, N. Y.; Dr. Ezra M. Hunt, secretary of the State Board of Health, and Dr. F. S. Billings, editor of *Journal of Comparative Medicine and Surgery*, were unanimously elected honorary members of the association, as a mark of respect for their devoted interest in the veterinary profession.

The essayists appointed by the president for the next meeting are Drs. Rowland, Dixon and Hawk.

The association decided on holding their next regular meeting in Newark.

Dr. Dixon moved that delegates be elected to attend the next meeting of the U. S. Veterinary Medical Association. Carried.

Drs. Hawk, Dyer and Sattler were nominated and elected by acclamation.

Dr. Dyer moved that the president appoint a delegate to attend the next meeting of the Pennsylvania State Veterinary Society, which will be held on March 4th, 1885, at the corner of Thirteenth and Arch streets, Philadelphia.

The president appointed Dr. Dyer.

Dr. Glass invited all members to attend the meeting of Pennsylvania State Society. The invitation was accepted.

After tendering the essayist and the visitors a vote of thanks, the meeting adjourned.

FIRST SPECIAL MEETING.

The first special meeting of this association, called by order of the president, for the purpose of discussing the advisability of incorporating by an enactment of the Legislature now in session, was held at the office of Dr. J. W. Hawk, on Tuesday, February 10th, 1885.

The secretary, in absence of the president, called the meeting to order at 4 o'clock P. M.

At the request of the association, the vice-president, Dr. Dixon, acted as chairman.

The reading of the minutes of the third regular meeting were dispensed with, and the secretary was requested to call the roll.

The following gentlemen answered the call, viz.: Drs. Arrowsmith, Sattler,

Dyer, Dixon, Dusten, Haydon, Leatherman, Gerth, Jr., Rowland, Hawk, Mook and Lowe.

The secretary then read a letter from Dr. J. C. Corlies, in which he stated his reasons for non-attendance. The letter was laid over for discussion at the next regular meeting.

A bill to incorporate the association under the name of the "New Jersey State Veterinary Society," by an enactment of the Legislature, was then read, and after considering each section separately, it was adopted as a whole, and a resolution offered and passed that the association incorporate as provided for in said bill.

It was moved and seconded that the chair appoint a committee of three, who, in connection with the president and secretary, take charge of and engineer the bill through the Assembly. The chair appointed Drs. Hawk, Leatherman and Dyer to act on said committee.

It was moved that the committee be empowered to expend a sum of money not to exceed \$25. Seconded and carried.

A motion was made by Dr. Dixon that the secretary notify each individual member of the association that a bill to incorporate the association is going to be presented to the Legislature, and urge them to use their influence in securing its passage.

The meeting then adjourned.

J. GERTH, Jr., D.V.S., Secretary.

VETERINARY HONORS.

F. S. Billings, V.M., who has just returned from Europe, has been invited to take charge of the pathological department and laboratory recently established by the N. Y. Polyclinic. Dr. B. has been intimately connected with Virchow for a number of years, and is undoubtedly well fitted for the position to which he is called. We can look for original investigations and interesting publications from him. He is the first veterinarian in this country that has ever been directly connected with a school of human medicine.

COMPLIMENTARY TRIBUTE TO A VETERINARIAN.—Dr. T. W. Spranklin, D.V.S., of Baltimore, has been presented a handsome gold medal by the dairymen of Baltimore County for his professional attention and care in introducing inoculation as a preventive measure against contagious pleuro-pneumonia.

CORRESPONDENCE.

INDIGESTION IN THE HORSE.

Editor American Veterinary Review :

I have been much interested in reading the leading article in your February number, by Dr. Byrne, on Indigestion, and as I have just had two peculiar cases, I will describe them, as I think they will be of some interest.

February 9th last I was called to see a bay gelding that had the following history: He had been fed early in the morning and driven about forty miles over a rough mountain road, stopping only for a few moments' lunch at noon. About an hour previous to my call he had become suddenly sluggish, almost refused to go and began to bloat rapidly. When I saw him, I found that the horse was "panting," pulse imperceptible, extremities very cold, expression haggard and sensibility all but gone. I immediately inserted the trocar before trying anything else, and the animal began to breathe easier at once. This was followed by a laxative ball, aloes $\mathfrak{z}\text{iv}$ and an absence of food until the next day. Followed with easily digested food for a couple of days, and the animal was at work again in four days.

Case No. 2.—A small roan saddle mare about 18 years old. Always had been well, but from eating a small quantity of alfalfa hay, suddenly showed symptoms of severe colic.

Feb. 11th. I never have seen symptoms develop with such rapidity as they did in this case. All of the stimulants and free use of the injection pump failed to produce the least effect, and so I again resorted to the trocar. Relief was only temporary, and I had to again use the instrument. The first punctures that I made were rather high up, and I found it necessary to punctuate the colon through the inferior abdominal wall, as well as the cœcum. Before I could get the bowels to empty themselves of the undigested hay, I had to insert the trocar six different times, and finally I left the cannula in the intestine for about an hour at a time. A slight peritonitis followed which quickly passed, and the animal left the infirmary to-day kicking up her heels and

playing. I have used very often this same sort of treatment. I do not apprehend much if any danger from its use, if used in time.

Animals do not die from the use of the trocar, but rather from the effect of the distended condition and the shock upon the system. In twenty cases that I have punctured, I have only lost two, and I am satisfied that in those cases I put off puncturing until too late. I am certain that a small long trocar with long tapering point and cutting edges *kept scrupulously clean*, and used in time, is more agreeable to the horse and more effectual than the drenching horn and nauseating medicines.

I am of the opinion that many cases are lost from death caused by simple distention. As often, perhaps, as from inflammation. Certainly, simple distention may be relieved by the trocar, and I think that succeeding inflammation is not nearly so apt to follow.

GEO. C. FAVILLE, D.V.M.

FT. COLLINS, COLO., Feb. 20th, 1885.

INOCULATION IN CONTAGIOUS PLEURO-PNEUMONIA.

Editor American Veterinary Review :

In the preliminary report made by members of the Bureau of Animal Industry to the Commissioner of Agriculture, in their investigations and experiments, we are informed that "The experiments relating to the contagiousness of pleuro-pneumonia as found in the stables inspected, which are conducted at the station on Barren Island, have developed many important facts," and goes further to show, or at least lead any one to suppose, that the developments are simply as to the *contagiousness* of the disease. I think that part of the question has been long settled by many costly accidental experiments, and any further experiments as to the contagion would, to veterinarians at least, appear to be time and money thrown away. I should like to see the Bureau turn its attention to something new in the way of experiments; say, preventive measures. Inoculation is one well worthy their attention. Though I am free to admit that I have little or no faith in the protective value of inoculation, and the more I look into the question, the more skeptical I get, yet am open to conviction,

and so would like to see that measure tested in many ways, some of which might be: the result of inoculation of animals already ejected; whether or not it hastens the result, as shown by Pasteur in his experiments in inoculation with anthrax. (If it should, then it would not do to inoculate cattle that had been exposed to the infection); if any pulmonary complications follow inoculation—it has been so reported—and what they are; will the inoculation of perfectly free cattle promote the natural infection; and last, but not least, does an inoculated animal have immunity against *any* form of the disease.

Yours very truly,

BROOKLYN, Jan. 28th.

W. H. PENDRY, D.V.S.

A COMMENDABLE SELECTION.

Editor of AMERICAN VETERINARY REVIEW:

At a recent meeting of the faculty of the Veterinary Department of the University of Pennsylvania, Mr. W. L. Zuill, M.D., D.V.S., of Philadelphia, was selected to fill the chair of surgery in the school. The appointment of Dr. Zuill to this high honor has been well received by the fraternity in Pennsylvania. Graduating at the American Veterinary College in the year 1880, and at the Medical Department of the University in 1884 with high honors, this distinction comes at an early year of his life, but his successful career as a student in both of the former schools, and his marked success as a practitioner in Philadelphia, have all made this selection one due to merit and worth. It is alike a high tribute to the high standard of teaching of the American Veterinary College and was for her an additional honor, as an educator in the ranks of the profession, to the long train now following her representatives. In order to add the value of the methods of surgery of other schools, Dr. Zuill will spend a number of months in several of the leading veterinary schools of Europe.

W. HORACE HOSKINS,

254 S. 15th St., Philadelphia.

CORRECTION.

At the request of Dr. Peabody, we wish to correct page 493 of our last REVIEW, twelfth line from the top, and make it read, "received *ustilago madies* or *corn-ergot* in 3 ii."

NOTICE.

UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The semi-annual meeting of the association will take place on the third Tuesday in March, in Boston, at Young's Hotel, 10 o'clock A.M.

C. B. MICHENER, *Secretary*.

EXCHANGES, ETC., RECEIVED.

We are pleased to acknowledge the receipt of our usual medical, veterinary and scientific exchanges, at home and abroad, and also of the pamphlets directed to our editorial rooms.

Communications have been received from many of our friends, viz. : A. A. Holcombe, C. B. Michener, C. H. Peabody, J. Gerth, Jr., D. Dixon, J. Rogers, H. F. James, R. Finlay, J. F. Winchester, C. T. Goentner, Geo. C. Faville, W. H. Pendry, W. H. Hoskins, J. C. Meyer, Jr., G. B. Houston.

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